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Ship Sales Await Bankers' Plan

**Disposal of Great Government Fleet Retarded by Delay of
Financiers in Agreeing on Best Method—One Plan That Works**

FINANCE is still wavering in its welcome to the new brother in the family of American industries. Bankers have heard so repeatedly in past years of the threatened adoption of this new brother—the merchant marine—that they find it difficult to realize that the papers have been signed and the size of the family permanently increased. The rapidity with which financial leaders come to recognize this change has much to do with determining the rank of this newcomer in the family councils.

Investors in shipping securities have entered the market more rapidly than the cautious hesitancy of the banking fraternity would seem to justify. Marine securities to the amount of \$50,000,000 have been issued monthly throughout the last quarter and the volume shows no indication of declining. The importance of rallying the support of the country's major financial institutions has been emphasized ever since the inception of the shipping board's war program justified the hope that the paralytic inactivities of American marine efforts would give way to full-blooded vigor. Efforts to engage banking attention have been made repeatedly but only a few months ago the most promising result was the declaration by a committee appointed to study the subject that "serious consideration and thoughtful attention" was needed. A new committee, appointed by the shipping board, is now studying means of financing the sale to private investors of the government-built fleet and the hope is universal that their efforts will result in a concrete program rather than in amiable phrases.

A Tested Plan of Ship Financing

Indications of real interest in the subject have been given during the past few weeks at hearings in Washington on the ship mortgage bill. Witnesses representing business, banking and legal interests, have energetically supported or opposed this plan of the shipping board to give ship mortgages higher standing than admiralty practice has permitted. The hearings offered an opportunity for the wider appreciation of a

plan of financing ship construction and ownership, which has been successfully tested for many years.

This plan of financing is analyzed in detail in the following pages. Its value at this time is demonstrated from the fact that more than \$100,000,000 of ship securities have been handled without a loss. The banks of the Great Lakes district, where the plan originated and is in successful use, think so well of the practice that they have occasionally branched out and financed ocean tonnage on the same basis—also without a cent of loss. Briefly, the vessel man desiring to start or enlarge his fleet, would raise 50 per cent of the cost price through sale of stock, the bank loaning the balance upon terms which have proved easy to meet. Increased interest rates and questions of depreciating ship values alter the details of the plans now, but the principle is unchanged.

Proposed changes in ship mortgage laws are generally looked upon as one method of simplifying the disposal of the shipping board's fleet. As with all important legislation, doubt is expressed by many as to whether the passage of the bill will not have the opposite effect from that desired by its proponents. The bill aims by giving first rank to mortgages to increase the stability of this class of paper.

Up to Bankers to Act

The prompt disposal of the government fleet is becoming of more imperative necessity. Congress apparently will adjourn this special session without passing any merchant marine legislation, but the attitude of both parties in the new congress convening in December will be more sympathetic than ever before. The legislators need intelligent suggestions from competent quarters and the bankers should formulate at once a definite program for making ship securities easy to distribute throughout the country. The problem of disposing of the ships is proving, from the Washington standpoint, even more difficult than constructing them. General and intelligent assistance will simplify the problem and expedite its solution.

World Charter Market Reviewed by

RIVALRY LOOMS

Competition Between Maritime Nations Grows as Ship Demand Continues — Coast Trade Grows

RUMORS of differences between the United States and England on the high seas have been current for some months past. The development in the two countries among business men interested in foreign trade, of views which conflict, is but natural. Release from the common insistence on measures to win the war, has obviously excited the minor irritations inevitable when opposing interests come into contact. Some outcroppings of this commercial struggle are coming into view. Americans opposed reductions in ocean freight rates immediately following the armistice, but the English forced the issue. Ever since then the weakness in rates has been anticipated first by the British ships. Over the division of the enemy merchant tonnage which came as a prize of war no little feeling has been apparent.

Much of this rivalry has been concealed, but it revealed itself when England took over the 12 oil tankers belonging to the German subsidiary of the Standard Oil Co. According to the prior understanding, these ships were to be returned to their true owners despite the fact they had sought refuge in a German harbor during the war. Rightfully, the action of the English became a diplomatic matter. Coincident with this the shipping board refused to turn over the *IMPERATOR* and other German ships which the interallied council had loaned the United States for troop movement. The natural inference was that America was doing this in retaliation, but the shipping board insisted that it had made expenditures on these vessels when received from the Germans for which the British should make some compensation.

Trade Test is Near

The public, through the daily press, has had an excellent opportunity to be misled by bellicose insinuations. The mere act of the shipping board in cancelling all sailings to United Kingdom ports during the last days of September was ample to cause suspicions of an invidious nature. But the English railways were completely crippled by a strike and the resulting congestion in British ports was threatening to say the least. The more conservative minds in both countries will undoubtedly bring order out of the present situation and the friendly spirit between the two countries is certain to continue. American and British mariners will frequently meet on the high seas in the future and any rate war initiated by the English cannot at this time starve out the vessels flying the stars and stripes.

Merchant marine enterprises must be economically profitable if they are to become permanent. The English contend, with full truth, that American seamen are paid more than the seamen of any other nation. But it would be interesting for the British to see the

number of English officers and sailors applying for American papers. This will most likely result in the acquisition by the United States of some valuable new blood and a personnel that is ground in maritime ventures. According to estimates made by the government, steamships under the American flag now comprise approximately 25 per cent of the world's steam tonnage. We shall not only require a large personnel to man these ships but more executives to direct them. Japan is claiming third rank among the maritime nations, and certainly the more astute of the British will prefer American competition above any other. A test of whether we are to have competition between friends or rivals is now at hand. With the allocation of the transports to private operators, American lines will be in a position to engage actively in the passenger business.

European lines are showing activity, but their extensions have been cramped by the lack of available tonnage. French, Italian and Swedish interests have been trying to purchase ships from Americans without appreciable success. Even the Germans are reputed to entertain a hope that Americans will join with them in rehabilitating their merchant marine. The White Star line has let a number of contracts with British yards for new vessels, and the Cunard line has leased a pier in Philadelphia.

Passenger Travel is Heavy

The intention of the shipping board is to use the best of the former German liners in the transatlantic service, touching at French ports particularly, and the secondary ships will be placed in the South American trade. The *LEVIATHAN* has ended her war service and, according to prophecies, she will be turned over to the International Mercantile Marine. The Kerr line has been anxious to purchase some of the ex-German liners, but the shipping board is not yet prepared to part ownership. Furthermore, it is intended to build 12 transports at the Hog Island yards to be available for combination freight and passenger trade. The demand for transatlantic passenger accommodations is so great that the British lines have no reason to fear American competition. One British line dispatched nearly 1000 passengers from the port of New York alone in one week and the companies acknowledged that they foresee sufficient travel now to keep all their vessels busy for

Suez Canal Data

DURING the year 1918, vessel movements through the Suez canal aggregated 2522 passages with a total net tonnage of 9,251,601. But five American vessels were listed, the only other nation with a smaller number being the Netherlands with one vessel. The United Kingdom led the list with 1862 vessels with a tonnage of 7,356,371.

The net average tonnage per ship was 3668 which showed a slight increase over 1917 during which year it was 3557. The average transit time during 1913 was 16 hours, 19 minutes, during 1917 it was 18 hours, 10 minutes and in 1918 it was 23 hours, 6 minutes.

Experts in This Country and Abroad

five years to come. The government vessels acquired through allocation are enabling many American lines to establish trade routes which would have been impossible under other circumstances. The Sun Oil Co. has dispatched a tanker to Hamburg. The Kerr line has brought three cargoes from Germany, consisting chiefly of sugar beat seed, glassware and toys. The Independent Steamship Corp., operating a shipping board vessel, has brought the first cargo since the war to New York from the Dutch East Indies. It consisted of tea, coffee, rubber, tapioca, tin, pepper, hides, etc. The Independent is sending a special representative to the Near East with the announced purpose of establishing connections in Egypt, Syria and Asia Minor.

The International Mercantile Marine, it is announced, contemplates establishing a passenger service to South America, which gives added credence to the report that the shipping board will allocate to this line some of the ex-German liners. The company also hopes to establish a passenger line to Australia using the Panama canal, thus establishing a direct route from the Atlantic seaboard to the immense markets of the antipodes. Such an extension of service would be a noteworthy addition, especially since this house has already completed plans to operate between New York and Belgian ports.

New Lines are Established

The Luckenbach line is inaugurating a regular service to Rotterdam, using the new 10,000-ton steamers of this company built in American yards. A. H. Bull & Co. plan to enter the Porto Rican passenger trade. Moore & McCormack plan to run three new lines out of Philadelphia. One will serve South America, the second will touch at Irish ports, while the third will be to Scandinavian destinations. This company only recently inaugurated a line between New York and Belfast.

Having established a line to Scandinavian ports,

Facilities Expand

HARLAND & WOLFF, Belfast, Ireland, now controls on the Clyde the shipyards of Caird & Co., Ltd.; Burmeister & Wain, Ltd.; London & Glasgow Engineering & Shipbuilding Co., Ltd.; John Brown & Co., Ltd.; Mackie & Thomson, Ltd.; A. Macmillan & Sons, Ltd.; D. & W. Henderson, Ltd., and A. & J. Inglis, Ltd.

The last five yards named form a group launching practically into the same water.

The Henderson and Inglis yards have just been taken over and alterations and extensions are planned. Harland & Wolff now occupy a leading position as builders of liners and other large craft.

the Globe line is now working on plans to serve South America as well. This line, a subsidiary of the house of Gaston, Williams & Wigmore, owns only five ships, but plans to purchase more. The United States Navigation Co. has dispatched a ship to Hamburg but will not inaugurate its regular service to German ports until conditions become more nearly normal. This

LINES EXPAND

**Many Shippers Inaugurate Services
to Carry Goods to Foreign Ports—
More U. S. Vessels Now on Pacific**

line is now operating between New York and London. The North & South Atlantic line will begin regular sailings shortly. The National Navigation Co. has arranged for agencies in Central America and hopes later to extend to South American ports. The Pacat Steamship Corp. has established agencies in Holland, France, Germany and Denmark.

The Clyde and Mallory lines contemplate starting a transatlantic freight service in the near future. The first sailings will probably be to the west coast of Italy. The Pacific Mail Steamship Co. has announced the inauguration of a new service from Los Angeles to Baltimore, calling at Havana on the eastbound voyage. Sailings will be every three weeks. On the westbound voyage the steamers will call at Puerto Columbia, Corinto, Acajutla, San Jose de Guatemala, San Pedro and San Francisco. The International Mercantile Marine, Ward, Kerr, Moore & McCormack, Grace & Co., Munson, American-Hawaiian and other American lines are said to have petitioned the shipping board for assistance to start in the South American trade. It is believed that any one of these would be glad to have charge of the troop ships for passenger service.

Activity has not only been noted in the American lines previously established, but some new companies have recently come into existence which promise to have an important bearing in the near future. Edward J. Dalton, of Triangle fame, has organized the Crescent Steamship lines. According to report, Mr. Dalton has interested Scandinavian money in his new venture. The line hopes to engage in South American as well as Scandinavian trade, and the supposition is naturally that it will try to get into Germany. Mr. Dalton is also interested in the Cuba Steamship Co. which is expected to attract Cuban capital. This projected line will run between New York and Cuban and Caribbean ports.

Steel and Cotton Sag

Peculiar conditions prevail in North Pacific export circles. Shippers and operators are apprehensive over the strike situation in the steel industry for the reason that thousands of tons of steel have been booked for export to Japan. A strike tying up production for a long period would have a serious effect upon the transpacific situation. Steel has been moving in large quantities to the Orient during the past three months on a basic rate of \$12 per ton weight. There is a lack of measurement tonnage and in some instances vessels have sailed with full cargoes of weight freight, a condition somewhat unusual. But little cotton is being booked for the Orient through the Seattle gateway and operators fear that much of this business has been diverted to the all-water route from gulf ports to

Japan, on which regular service has been established. Heretofore, steel and cotton have produced a nice balance in weight and measurement. Should steel shipments be curtailed because of the strike, operators believe they can use the space with lumber for which there is a heavy demand in the Orient and for which heretofore, little space has been available.

Pacific Situation Improves

Operating companies in the transpacific trade have adopted the shipping board's new commodity tariff, which upsets all previous customs in the Pacific. From time immemorial it has been customary to operate on a flat rate basis and for months the rate has been \$12 for weight and \$14 for measurement. Naturally some confusion has arisen because of the complexity of the new tariff but shippers are gradually becoming accustomed to the change. Under the new schedule, steel, the principal weight cargo moving through Seattle, continues at a \$12 rate but there is an increased rate for measurement cargo as a whole.

At the present time, shipping board vessels are doing a considerable percentage of transpacific carrying. Japanese freighters, which have controlled the situation for several years, have in a large degree been withdrawn for more lucrative routes in the Atlantic and Indian ocean trades. Consequently United States tonnage, owned by the shipping board and operated by private firms, is making its influence felt in Pacific routes. One development, which has aided in bringing this about, is the Chinese boycott against Japanese ships, due to feeling over the Shantung situation. Many Chinese firms have sent out notices that they will absolutely refuse delivery of their cargo if it is brought in Japanese bottoms. Whether the American flag can continue to compete successfully with the Japanese in the Pacific is a matter for the future to decide but the present situation is viewed with satisfaction by all who wish well for the American merchant marine. It is realized, however, that American ships must compete with other nations on the same basis of rates, for shippers naturally select the ship offering the lowest freights.

Lumber

Lumber Movement is Large

There is continued call for tonnage to carry lumber to various markets. During the past month fixtures have been made for full cargoes to Alexandria, Egypt, Basra, Persian gulf and Genoa, Italy. This is the first time Puget sound lumber has been dispatched to these distant ports, except in the case of Italy where parcel shipments have heretofore gone. Charters for lumber vessels have also been made for Bombay, River Platte and Great Britain while lumber in large quantities is moving to China and Japan.

The former seasonal movement of wheat and barley from Puget sound and Columbia river seems to have been eliminated by war conditions for as far as known not a single private charter for this business has been made this year. Instead, the surplus is moving in the form of flour in shipping board vessels under direction of the food administration, which is shipping an occasional cargo of wheat. There is a large demand for vessels for this business and the warehouses of tidewater mills are congested with flour awaiting space for Europe. While the bulk of the movement of railroad ties to Great Britain appears to have passed the crest, there is yet some of this

material to move, most of it from British Columbia. The British government has bought 72,000,000 feet of lumber in British Columbia and tonnage for moving two-thirds of this immense order has been provided. About 30 per cent of this cargo has already been shipped and it will continue to move until next June. Most of it is being taken by vessels built at British Columbia yards for the French government.

Boston's Exports are Heavy

The improvement in outward freights from Boston has been continuous throughout last month. Many new lines have opened up and new fields have been added to the business of New England exporters. Wheat, oats and barley have been moving in large quantities to England. Several large cargoes of rye have been leaving Boston for Norway. The steamer BUELAND sailed recently with 200,000 bushels of this grain bound for Kopperwick, Norway. Apples, fruits and other provisions have been shipped to England and other north European ports. A new Cunard service has been opened up between Boston and Piraeus, Greece. The Cunard Steamship Co. has also established service between Boston and Australia. The Australian route includes Cape of Good Hope, Adelaide, Melbourne and Sydney, and a regular monthly schedule is planned. Cargoes from many parts of the world have been reaching Boston. The steamer CITY OF MADRAS docked recently from Cape Town, South Africa, with a cargo of hides and copper.

The United States shipping board has assigned several new steamers to Boston firms. The LAKE ELLENDALE is to be operated by John S. Emery & Co., between Boston and Buenos Aires. The WILLAMANTIC has been assigned to the France & Canada Steamship Co., and will operate between Boston and St. Nazaire, France. Other steamships have been allocated to the United Fruit Co., Boston, for coastwise and gulf service. Arrangement has been made for the direct sailing from Boston to Kobe, Japan, and to Manila, of the new American steamship LAKE FAULKE. The steamer is to be operated by John S. Emery & Co. and plans maintaining a general service.

Bottom Market Holds Firm

The market for bottoms has held firm and considerable business has been done recently in time charters for transatlantic trading. Spot freight for Mediterranean ports has been quick to sell and the demand has been rather for cargo space than for cargoes. A pronounced stimulus in coastwise trading has been noted and lumber cargoes for the first time this year have been moving between Maine points and New York. Large quantities of sugar have been reaching Boston from Cuba. The steamer CRAINCREEK arrived in October with more than 6,000,000 pounds of sugar, consigned to the Revere Sugar Refining Co., Boston.

The exports through Boston during September have nearly doubled those for September, 1918. Conditions at New England ports have been favorable through last month until the last few days, when an order has come from Washington to hold up all shipping in United States shipping board vessels destined for Great Britain. This order, which is due to the Great Britain railroad strike, will affect some ships already loading in Boston harbor and will also affect large quantities of material in warehouses which is planned for future shipment to England.

How Lake Banks Finance Ships

More Than \$100,000,000 of Vessel Securities Have Been
Handled Without Loss—Analysis of Proposed Mortgage Bill

BY JOHN W. HILL

RECENT hearings before the house merchant marine and fisheries committee on the Greene vessel mortgage bill, which would give mortgage liens priority over supply and repair bill liens, developed the interesting fact that while ship mortgage securities are shunned in the eastern money market, they are held in high esteem in the Great Lakes region.

In the east the existing law, placing supply and repair bills ahead of mortgage liens, is regarded as branding marine bonds with the stamp of inferiority and rendering them undesirable for high class investment purposes. The Great Lakes region on the other hand, has evolved a standardized procedure which hedges vessel securities about with ironclad safeguards that have sufficed to satisfy the most conservative of investment agencies. This standardized method is known as the "Great Lakes plan" of financing.

The shipping board has designed the vessel mortgage bill to meet the objections of the eastern financial interests in the hope that it will serve to pry open the golden portals of the great money market in New York and other centers. The measure, which is part and parcel of the Hurley plan for placing the government-owned fleet into the hands of private purchasers, it is claimed will facilitate the absorption by the country of the new merchant marine and make possible the popularization of ship securities.

The east is not solidly behind the measure, however, and it has been the object of bitter attacks as well as generous defense from opposing elements among ocean vessel interests. The issue has been sharply drawn between those who see in the bill a blow to ship operating credit on the one hand and those who, denying this, believe the enactment of the bill is vital to the very existence of the American merchant marine. Still others fear the passage of the bill would be a revolutionary move likely to stir up old legal difficulties which have only been settled satisfactorily after more than a century of admiralty law practice.

In the Great Lakes district, strangely enough, financial interest,

theoretically the beneficiaries of the new bill because of its asserted power to enhance bond values, are maintaining a lukewarm attitude of

Explains Plan

THAT vessel mortgage bonds are without standing in the eastern money markets while enjoying the highest prestige in the Great Lakes region is a curious fact that may be explained by one phrase: "The Great Lakes plan." Twenty years of successful experience under this plan, have convinced investors in Cleveland and other Great Lakes centers of the fundamental soundness of marine investments.

"The Great Lakes plan" has been evolved from the experience of friends of the ship industry, who were anxious to aid in its expansion by the development of a broad market for its securities. It embodies a system of safeguards tending to reduce the moral hazard of marine investments to a minimum, yet preserving the freedom of a vessel's operating credit within reasonable limits.

The east has avoided ship securities because of the present law which places supply and repair bill liens before mortgage liens, holding that this practice makes marine indentures bad risks. The Greene vessel mortgage bill, if passed, would remove the eastern money market's cause for fear and jump mortgage liens ahead of supply and repair bills. By this means the shipping board, which says the enactment of the Greene bill is essential if there is to be an American merchant marine, hopes to make possible the sale of the government-owned fleet to private buyers. In the accompanying article the Great Lakes plan is explained and arguments for and against the Greene measure are outlined briefly.

indifference toward it. They do not object, of course, to any measure which would heighten the attractiveness of securities, but they join with other elements of ship interests on the Great Lakes in demanding that

nothing be included in the new measure that might in any way jeopardize the vast amount of bonds outstanding under the Great Lakes plan.

Great Lakes interests even have gone so far as to request that the house committee specifically exclude their district from the operations of the bill. Although this was impossible, the committee has introduced amendments which will permit the preservation of the Great Lakes plan and tend to free existing ship securities from the danger of being caught in a legal shambles. These ends have been attained by two provisions, one of which provides that "the act shall not apply to any existing mortgages nor any mortgage hereafter placed upon any vessel now under an existing mortgage" unless all parties to the transaction desire it, while the other provides "that nothing in this act shall be construed to prevent any person from waiving or subordinating his lien by written agreement."

The development of the Great Lakes plan has been a process of growth over a period of 20 years. It is not a fixed formula, but rather a composite practice existing in the provisions of a host of mortgage deeds of trust, some of which differ in detail, but all of which are based upon the same accepted underlying principles of safety.

The plan includes numerous provisions for raising a solid barrier against risks in ship financing, but the following salient features, found in most mortgages in one form or another, are recognized as the chief safeguards under the Great Lakes method of financing:

First: The mortgage covers but one-half of the value of the property.

Second: Insurance to the full insurable value of the property is carried by the owner and controlled by the trustee.

Third: When the mortgage is placed, the owner must guarantee the ship to be completely free from mechanics lien or other encumbrances.

Fourth: The company agrees not to declare any dividends on common stock until bond interest is provided for out of earnings.

Fifth: Provision is made for supplying of periodical reports on business by the company to the trustee.

Sixth: A limit, either as to amount

(Back of Bond)

**THE UNITED STATES OF AMERICA,
STATE OF OHIO.**

No.

**THE LIMESTONE TRANSPORTATION COMPANY
FIRST MORTGAGE**

75 PER CENT. GOLD BOND

SECTION 9. The Company, so long as any of the bonds issued hereunder and secured hereby are outstanding, will at its own expense keep said vessels insured against all loss or damage by fire, the elements, perils of the sea, collision and generally against losses arising from fire or any kind of marine risk or disaster, and will provide and continuously keep in force protection and indemnity insurance with respect to said vessels, including all such other insurance against liability for injuries

**THE CLEVELAND TRUST
CLEVELAND, OHIO.**

TRUSTEE'S CERTIFICATE.

It is hereby certified that this bond is one of the issue of bonds described in the within mentioned Mortgage or Deed of Trust.

THE CLEVELAND TRUST COMPANY, TRUSTEE,

By.....
Vice President.

actual cost; that the trustee of the mortgage shall be required to protect the lien of the mortgage by attending to the recording thereof and by causing the property covered by the mortgage to be insured against all risks for an amount equal to the full insurable value of the steamship, such insurance to be made with loss payable to the trustee and the policies deposited with it."

In addition, the law provides that the mortgagor "shall not suffer such steamship to become indebted in an amount exceeding 5 per cent of the original amount of the principal of said mortgage at any time, and the failure of the mortgagor to procure the release forthwith of the steamship from mechanics, laborers, admiralty, statutory or other liens, claims or charges against such steamship shall constitute a default in the provisions of the mortgage."

Limits Operating Debt

In many of the mortgages the ship is inhibited from going into operating debt beyond a stated amount, rather than beyond a percentage of the mortgage. The maximum for most large boats in such cases is \$10,000. Still other forms merely provide "that no debt or lien be created having priority over the mortgage."

The reason for requiring the full initial value of the insurance was explained by Harvey Goulder, Cleveland admiralty lawyer, in testifying regarding the Great Lakes plan before the house committee on Sept. 5. He said:

"The policy of marine insurance on a hull is invariably, so far as I know, a valued policy. They state the value of the ship and insure a portion of that, and agree that it shall be taken as the value of the ship without further account in the settlement of any loss under the policy. Now you will readily see if the insurance is less than the policy value, say it is 50 per cent of that, then while it would make no difference under a total loss, in the case of repairs and partial loss the underwriter is only insuring one-half.

Covers Full Value

"Now, say the ship is valued at \$100,000 in the policy, the insurance is \$50,000 and the loss is \$20,000. The underwriters are called upon to settle and they assert that since the insurance is 50 per cent, the owners insuring the other half, they will pay \$10,000, which of course is perfectly proper and right. Under our method, in this character of insurance, the full value is covered by insurance, in which case the underwriter,

or as to percentage of the mortgage, is fixed for supply and repair indebtedness, running above which constitutes breach of mortgage and is cause for foreclosure.

Financial and legal authorities in the Great Lakes region hold that these fundamental safeguards remove the moral hazard surrounding marine risks and place ship mortgage securities, even under the present law, upon a plane comparable with the best type of issues ashore.

Further Investments

The generally accepted guide to the mortgage forms and procedure of the Great Lakes plan is to be found in a statute passed by the Michigan legislature years ago, which gave savings banks permission to invest in ship securities under certain defined conditions. The passage of this law was a boon to the ship industry on the

Great Lakes. It opened up a broad field of investment among the savings banks and other public institutions in Michigan at an early stage when ship mortgages were an untried security and when the Great Lakes were beginning to build bigger boats that involved more money and necessitated wider borrowing operations. The growth of the market in Detroit and throughout Michigan, was followed by a similar growth in Cleveland and other centers in the Great Lakes district.

The Michigan statute provides "that such mortgages shall be upon steel steamships over 5000 tons capacity; that by the terms of the mortgage at least 10 per cent of the total issue of the bonds shall be retired annually, beginning within two years from the date of the bonds, and that the mortgage liability against the property shall not exceed one-half of its

as to any loss, pays 100 per cent of that loss. This is regarded as a tremendously important feature of the practice. In the event the owner fails to procure this kind of insurance the trustee is empowered to arrange it himself and add the cost to the debt."

The aggregate of flotations under the Great Lakes plan is estimated by some authorities to be in excess of \$150,000,000. The market has grown with the faith in the security and it is claimed there has never been one dollar lost on one of these bonds secured by mortgages on the Great Lakes and but two or three foreclosures.

While financial interests which underwrite ship mortgages take great pride in the safeguards that have been built up through development of the Great Lakes plan, they will tell you that in the last analysis, they are guided in such transactions, by their knowledge of the business ability and revenue prospects of the ship owners. The procedure of a Great Lake company in building a ship is first to issue and sell stock to the extent of 50 per cent of the cost of the ship. Then if it wants to borrow the remainder it must undergo the searching scrutiny of some strong financial institution, and surviving the test of its credit standing, ability of management, and earning prospects, the mortgage is taken, and bonds issued and distributed. No money is advanced by the bankers, however, until the company has disbursed the amount of the proceeds of the stock to the shipbuilding company. Then the proceeds of the bonds may be drawn upon to complete the ship.

This has been the procedure in the past during the normal times before the war. For two years, however, there has been a complete suspension of private shipbuilding in the Great Lakes region and now as the time approaches for the resumption of activity, new conditions must be faced. The cost of building ships, due to the increased wages and higher labor costs, has jumped at least 100 per cent. This is agreed on all sides to be an inflated cost, subject to modification as conditions resume a more normal complexion. Financial authorities assert that the great present problem in financing shipbuilding is the danger of deflation of values within the next few years. The question naturally arises whether or not financial interests will undertake to underwrite bond issues for 50 per cent of this inflated cost as in the ante-bellum days. For instance, a ship costing \$500,000 before the war for which the banks would then ad-

vance \$250,000 on a mortgage, would now cost around \$1,000,000. Will, then, the banks be willing to advance in the same proportion, or to the extent of \$500,000 on this ship, under present conditions? No fixed policy apparently has been adopted, but some institutions assert that their proportion of advances will be smaller than formerly, throwing a larger burden of the cost upon the stock or other sources of finance. It is argued that the value of the stock lies in the earning capacity of the ship rather than in its physical value, which, however, regulate in the large measure the worth of the mortgage.

Must Have High Credit

Still other institutions are prepared to underwrite the 50 per cent proportion as of old, provided the ship owner is of the highest credit standing and has assured earning opportunities. There are two particulars, however, in which the new procedure will differ from the old. Interest rates probably will average 7

instead of 5 per cent which formerly prevailed. Also in order to lessen the risk of deflation the old maturity of from 10 to 12 years will be reduced to six, or if the longer maturity is maintained, the mortgagor will have to reduce the bond issue by large amounts during the early part of the period, instead of distributing the installments in equal amounts over each maturity date. For instance, a recent ship bond issue for \$680,000 handled by a Cleveland bond house involved an advance of \$100 a ton, or practically 50 per cent of the construction cost, at present prices, of two ships of 3400 tons each. The issue has six maturities beginning Nov. 15, 1919, and ending with May 15, 1922. The first maturity calls for payment of \$150,000, the second and third for \$125,000 each; the fourth and fifth for \$100,000 and the sixth and last for \$80,000.

Thus it will be seen that with the first three payments the debt will have been reduced by \$400,000 and the \$100 a ton originally advanced

LUCKENBACH COMPANY, Inc.

TO

THE CLEVELAND TRUST COMPANY

SECTION 5. The Company covenants with the Trustee, that it is the true and lawful owner of the said steel freight vessels, and that the same are free and clear of all encumbrances, and that the Company has good right and lawful authority to convey the same, and that it will warrant and defend the same to the Trustee and its successors in the trust for the benefit of the holders for the time being of the bonds issued and outstanding hereunder against the claims and demands of all persons.

SECURING AN ISSUE OF \$500,000 FIRST MORTGAGE
SIX PER CENT. MARINE EQUIPMENT BONDS.

Dated July 1, 1915

upon the boat will have been reduced by 60 per cent to \$40 a ton. By this means financial institutions will insure mortgages against later deflation in values, out of anticipated strong ship earnings of the next few years. In order to take advantage of the present prosperity most mortgages framed now will provide that installments begin soon after the beginning of operation, instead of within two years after the placing of the mortgage as was the practice in normal times.

In no other section of the country has the ship mortgage practice been so standardized and successfully employed as on the Great Lakes. Eastern financial men admit that the Great Lakes plan is all very well for that district but hold it could not be practicably applied to the ocean merchant marine.

Applying the Plan on the Ocean

Easterners point out that with ships sailing to the ends of the earth, subject to the legal idiosyncrasies of foreign lands, and liable to huge accumulation of indebtedness for supplies and repairs, there is presented a different problem than on the Great Lakes where boats never get far away, and where the comparatively limited number of operators and of boats enables financial interests to keep in close touch with all developments. Consequently, it is asserted, investors refuse to become enthusiastic over ocean ship securities under the present custom which certainly gives mortgage liens a back seat.

The only flaw in this argument is that the educated market for ship securities about the Great Lakes is frequently utilized for the distribution of bonds of ocean going vessels, and investors do not discriminate against this class of investment provided they are assured of ample safeguards.

Those who are satisfied with the present practice which gives repair and supply bills priority over mortgage liens, are fearful lest a direct reversal of this custom, the outgrowth of generations of vessel operating experience, will seriously injure the operating credit of ships. The fight on the vessel mortgage bill has centered largely about this one important point. Because of the importance of tonnage in Cleveland and other Great Lakes ports, interests from that region are specially solicitous that such charges be exempt along with wages, general average and salvage from the provisions of the act. The bill would make failure to disclose mortgage indebtedness or the incurring of any inhibited contrac-

tural obligation, punishable by a fine of \$5000 or imprisonment not exceeding two years or both.

Opponents of the bill admit its passage would attract financial interests to ship securities, encourage their widespread distribution, and greatly assist in the creation of a large American merchant marine, the objects aimed at by the shipping board. But, it is asked, of what value will an immense merchant marine be, devoid of operating credit? A great fleet with many of its hulls rotting at the dock would not be a source of pride or profit for the nation.

Champions of the bill declare this objection is not well founded. Operating credit, they maintain, can easily be arranged for, between the mortgagor and mortgagee, or the ship operator can pay cash or put up securities for repairs and supplies.

The argument against the bill on the ground it would impair a vessel's operating credit was summed up by one witness before the congressional committee as follows:

"What is going to happen is that either cash or securities must be provided immediately before repair or supply men will do business with the ship or make any contract to repair her. The only alternative will be for these interests to charge such a large margin of profit that the cost of supplies and repairs will be increased outrageously. Proponents of the bill contend it will be easy to arrange for the matter of operating credit between the owner and the holder of the mortgage lien. I do not believe, however, that trustees or mortgagees will agree in advance to waive their liens in favor of a considerable subsequent lien. The moment this happens the value of the bill is killed. In practical operation you will find that only those ships owned by financially responsible parties whose personal obligation is good will be able promptly and efficiently to operate ships whenever it is necessary for them to have any repairs and any credit."

To Ascertain Owner's Equity

In order to make it possible for supply and repair men to ascertain the owner's equity in the ship at first hand the bill provides for the notation of mortgages on ships papers and by all collectors of customs upon each and every certificate of registry, or of enrollment or license, whether permanent or temporary, issued by them under which said vessels shall operate until the mortgage is fully discharged.

One of the witnesses before the committee, Judge R. G. Bickford, rep-

resenting the Newport News Shipbuilding & Drydock Co., created a laugh when he declared he favored painting the word "mortgage" or some symbol that would convey the intelligence that the vessel was mortgaged, on the stern of the boat under her name. He said he did not think it would injure a ship to advertise the fact that there was a mortgage on it and, on the other hand, it would be a protection to the repairmen and others having financial dealings with the vessel.

Some interests appearing before the committee have urged that its provisions be confined to the sale of government-owned ships, arguing that since the motive behind the bill is to clear the path for widespread distribution of these ships, it should not go further and disturb the complicated customs surrounding the private operation of ships that have been developed over a period of 140 years. These critics believe that with respect to the federal merchant marine, it might be advisable for the government to have a first lien upon the boats it sells. Opposition to the passage of the bill has assumed such proportions that latest reports from Washington indicate its fate is in the balance.

Claims Bill Not Necessary

The attack on the bill was closed by Judge Charles M. Hough, one of the circuit judges of the New York district federal court, who appeared at the request of the executive committee of the Maritime Law Association of the United States. He claimed the bill was not necessary as far as protecting the interests of the government is concerned. Neither was it necessary as far as the fleets are concerned. He declared the bill in its present form would most certainly open the way for much fraudulent practice.

Shipping board officials in support of the measure declare they are making an effort to educate the public up to absorbing ship securities, and that their efforts will go for naught without its enactment and the establishing of ship securities upon an unimpeachable basis. Chairman Payne of the board says:

"In order to make a merchant marine one of the institutions of the country you must have a large number of people interested in it. If we can get the public interested in every phase of shipping as owners, as operators, as investors, there is no possible reason why we may not have the greatest merchant marine in the world."

Trawler Has Gas-Electric Drive

Two 8-Cylinder Diesel Engines Are Direct-Connected to Generators Which Energize a Motor Driving the Propeller Shaft

BY HERBERT R. SIMONDS

SINCE the development of the submarine, the question of electric power transmission between the engine and the propellers of a ship has been discussed by marine engineers. Generally speaking, an engine must have high speed in order to cut down its weight and increase its efficiency while a propeller must revolve in the water at a comparatively slow rate, in order to avoid a big loss of power in a churning action. This discrepancy in the speeds of these two components of a ship's power plant has been the bugbear of designers for years, and the problem has been even more closely studied since the introduction of internal combustion engines into the larger vessel field.

Electric transmission of power is the most flexible means of transmission known and it is therefore only natural that this should be considered as a connecting link between the prime mover and the propeller of a ship. In spite of the many advantages of electric drive, however, there are several factors which have served to retard its development in the marine field. The chief reason has been initial expense. And perhaps, in view of the fact that submarines are now

successfully employing electric drive, this may be said to be the main reason.

Most engineers have felt it would be an excellent means of transmission but few have had the courage of their convictions. For this reason the recent announcement that electric drive had not only been planned for a commercial vessel, but that the machinery was actually being installed, is creating some comment in marine circles.

The General Electric Co. and the New London Ship & Engine Co. perfected a plan some time ago for the use of a diesel engine and an electric transmission of power for commercial craft of the under 200-foot class. It remained only to find an owner. The Marine Trawling Co. of Massachusetts was found and, through its manager, Fred L. Davis, was so completely won over to the new idea that a trawler was built especially for the purpose.

The new craft is known as the *MARINER* and was built at the yard of Arthur D. Story, Essex, Mass. The vessel's length over all is 150 feet, her beam 24 feet 6 inches, and her draft 15 feet. Selected timber was used in the construction and with a spirit of

co-operation in a new enterprise the builders turned out an excellent specimen of wooden vessel workmanship.

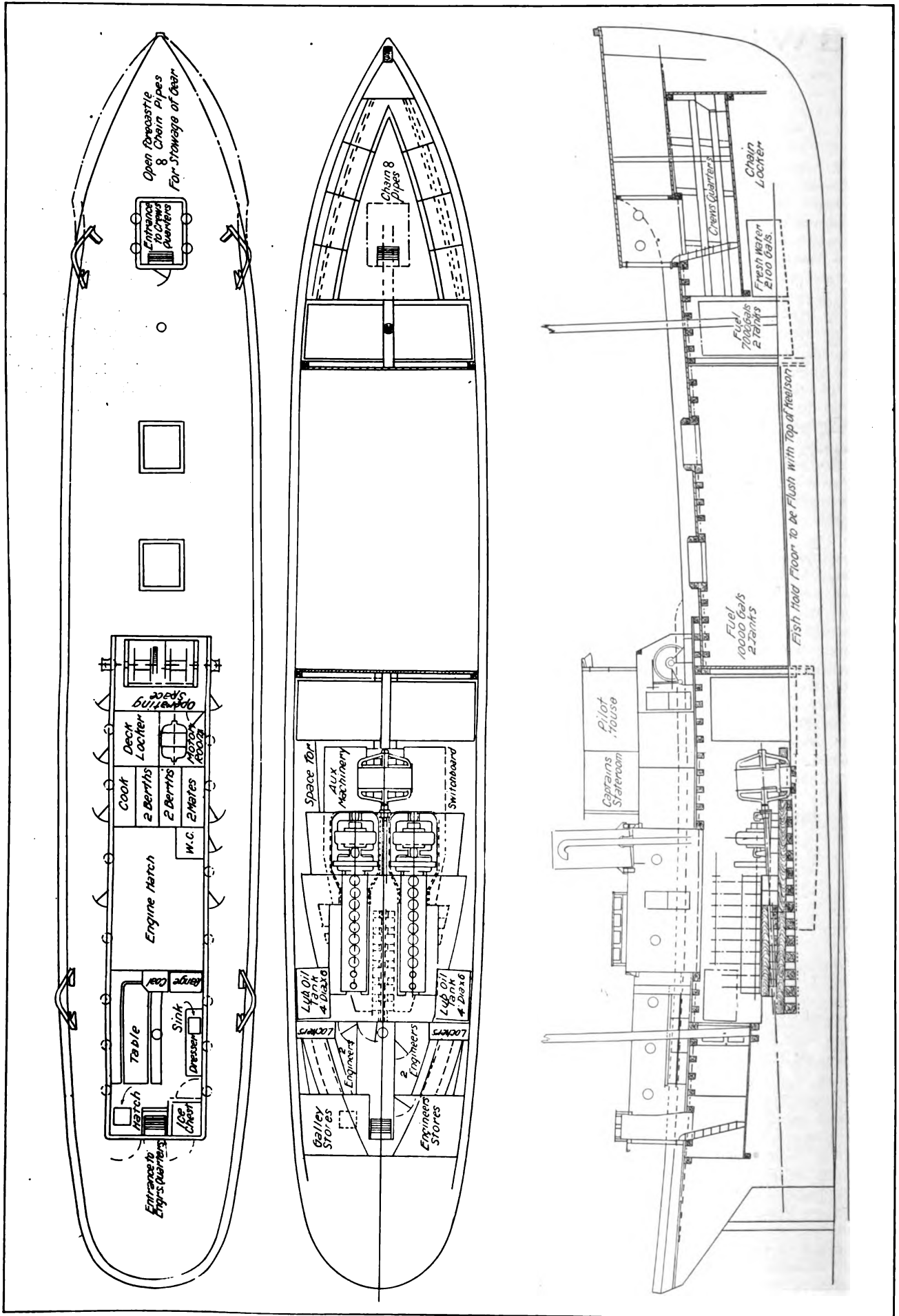
The power plant will consist of two 8-cylinder, 240-horsepower, diesel engines, turning at 370 revolutions a minute, each direct-connected to an electric generator. The current from these generators will drive a 400-horsepower electric motor, running at 200 revolutions a minute, which in turn will be direct-connected to the propeller shaft. The compact arrangement is shown in the plan view.

The motor's position is, of course, independent of the rest of the machinery and the propeller shaft can therefore be located without any of the usual mechanical considerations. Smaller motors will be used about the ship for operating auxiliary equipment and in a trawler this feature is of particular convenience. The switchboard, on the starboard side opposite the motor, will contain all the instruments and switches necessary for the control of the ship and the meters in the main motor circuit will furnish a reliable indication of the ship's speed.

In addition to the switchboard control, there will be small remote control switches on the bridge so that the captain may personally stop, start, re-



MARINER AT THE FITTING OUT DOCK—THIS VESSEL IS A NEW INNOVATION IN FISHING CRAFT

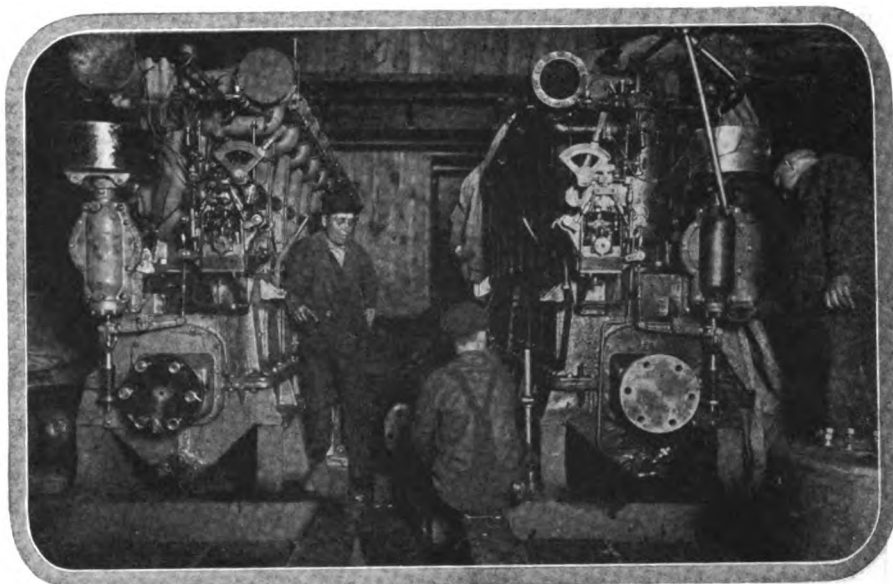


PLANS AND SIDE ELEVATION SHOWING GENERAL ARRANGEMENT OF 150-FOOT WOODEN TRAWLER EQUIPPED WITH DIESEL ENGINES DIRECT-CONNECTED TO GENERATORS WHICH SUPPLY CURRENT TO A MOTOR DRIVING THE PROPELLER SHAFT

verse or change the speed of the propeller as easily as if he were running a 16-foot dory. It is said the change from full speed ahead to astern can be made in five seconds.

As a direct-driven ship rides a sea, there is often danger of breaking a racing propeller and there is always a strain on the driving mechanism as the propeller leaves and enters the water. In an electric drive this is largely eliminated for the speed of the motor and thus that of the propeller will be the same (or nearly the same) regardless of the work which is being done.

A saving in hold space is one of the most common advantages claimed for the electric operation of vessels and the designers of the MARINER state that the equivalent steam equipment would weigh 115 tons as against 56 tons which is the estimated weight of the diesel-electric equipment. This saving in weight should not however be credited entirely to the electrical features. A direct-connected diesel engine drive would effect a like weight reduction. It is interesting to note that such an installation for a



VIEW IN THE ENGINE ROOM LOOKING AFT—THE HEAVY BEDPLATES IN THE FOREGROUND ARE FOR THE GENERATORS

trawler of dimensions similar to those of the MARINER is now under way at the New London Ship & Engine Co.'s plant.

The performance of the MARINER is looked forward to with interest among those in the fishing industry.

U. S. Wartime Ships Prove Well Built

PERFORMANCE of ships built by the Emergency Fleet corporation compares favorably with that of privately operated vessels, including those under either American or foreign flags. Records of the United States shipping board bear out this fact and they reveal that reports of disabled or sunken ships operated by the shipping board either are exaggerated, or that they cannot be accepted as an indictment as to the unseaworthiness of shipping board vessels. It is pointed out that such statements are obviously unfair unless comparison is made with performance of vessels other than those operated by the shipping board. For this purpose, actual figures and facts gathered from records of the shipping board are presented here, insofar as relevant statistics are available.

This is not done in any way to support the efficiency of a government-owned and operated fleet. Rather it is done to show that vessels built in American yards are in every way just as seaworthy as those built abroad. It also is intended to offset what appears to many to be a well defined organized propaganda to defeat the upbuilding of an American merchant marine, and to counteract reports which are unconsciously fitting into the aims of an apparent propaganda with this end in view. Some of these reports not only unconsciously act as such an agency, but they have been

proved to be entirely inaccurate. Also it is well to remember that ships built in American yards, under war conditions, naturally did not receive the severe inspection or were not required to meet the test that vessels built under normal conditions undergo. This may also be said, in all fairness, to vessels built in foreign yards under similar circumstances and of prewar ships under foreign flags, which may not be expected to measure up to the standard of new ships built under normal conditions.

What Official Records Show

Taking up the question of ships in dry docks for repairs, resort has been taken to official records of the shipping board to make a comparison between the number of vessels divided as between American and foreign flags, actually drydocked in New York harbor during the month of July, 1919. Information is not available as to the number of foreign ships laid up in drydock in foreign waters. The table of the comparison, as outlined, follows:

Flag	Number of Vessels	Percent- age of Total
American		
*U. S. shipping board..	58	31.2
All other	84	45.1
Total	142	76.3
Foreign	44	23.7
Grand total	186	100
Proportion of shipping		

board vessels of total
American vessels 40.8
*Includes vessels built by the
Emergency Fleet corporation.

This table represents the activities at 16 principal American drydocks and it indicates that of the total vessels docked at the drydocking facilities during the period under consideration, 76.3 were vessels under the American flag, and 23.7 per cent under foreign flags. Of the total American vessels docked, 142, it is shown that 58 or 40.8 per cent represented vessels built by the Emergency Fleet corporation, leaving a remainder of 84 American vessels, or 59.2 per cent not built by the Fleet corporation.

These figures, however, are not truly representative of the relative seaworthiness of American and foreign ships, but rather are advantageous to the latter, as it is not customary to make other than emergency repairs at foreign ports. A report from the New York office of the Emergency Fleet corporation dated Sept. 18, 1919, shows 94 vessels repairing or awaiting repairs in New York, of which 19 are under foreign flags and 75 under the American flag. Of the latter, 45 were under control of the shipping board. The repairs on these ships were almost entirely for reconditioning the vessels after long service and do not show any important structural defects.

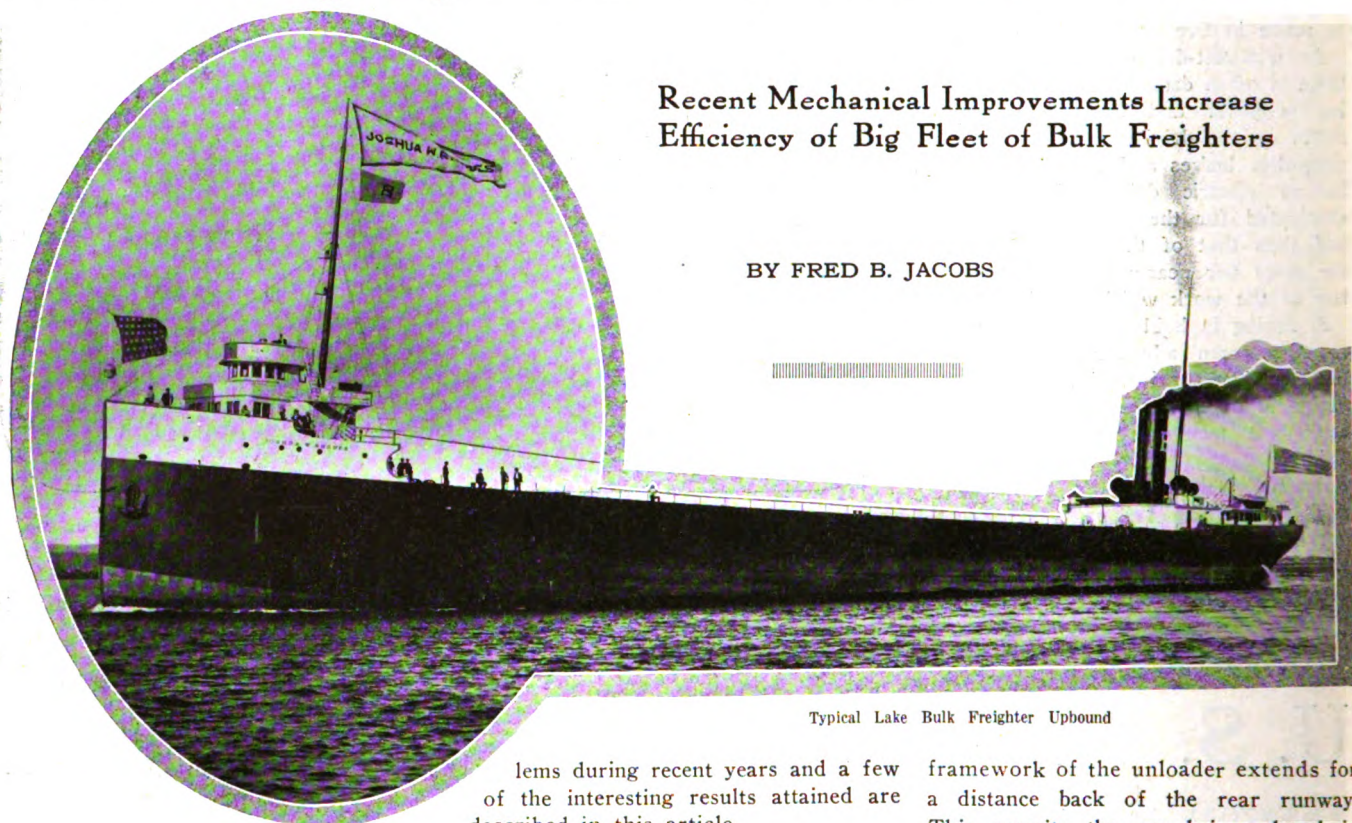
Concerning inspection, it is well

(Concluded on page 517)

New Equipment Used on Lakes

Recent Mechanical Improvements Increase Efficiency of Big Fleet of Bulk Freighters

BY FRED B. JACOBS



Typical Lake Bulk Freighter Upbound

FOR one who has never visited the Great Lakes, it is difficult to realize the vast volume of commerce carried over these inland seas. Although compelled by natural laws to remain dormant during the winter months, the vast fleet plying these waterways carries annually more than 100,000,000 gross tons of bulk freight. To move this vast tonnage efficiently requires constant study of navigation and transportation problems ranging all the way from simple innovations to lighten the work of ships' operators to such complex problems as loading and unloading iron ore in the shortest possible time. Much study has gone into these prob-

lems during recent years and a few of the interesting results attained are described in this article.

Ore handling equipment as used on the Great Lakes is the result of many years of progress in perfecting machinery to unload vessels rapidly. The unloader shown in Fig. 2, 3, 4 and 7 is a development of the Wellman-Seaver-Morgan Co., Cleveland. Notwithstanding its immense size, the machine has been so simplified that it is easily controlled and operated.

The device consists of an unloader which is mounted on trucks. These trucks travel on runway rails which are located a suitable distance apart to insure the proper support of the immense weight involved and to permit several car tracks being located underneath. The main

framework of the unloader extends for a distance back of the rear runway. This permits the ore being placed in storage piles when necessary.

Runway rails on which a trolley travels are located on top of the unloader. This trolley carries a walkingbeam from the outer end of which a stiff bucket leg is operated. The bucket on the lower end is operated through the medium of machinery located on the walkingbeam. Horizontal movements are accomplished by moving the trolley back and forth while the vertical movement is derived by operating the walkingbeam. The forward section of the walkingbeam overbalances so that the bucket lowers through the action of gravity.

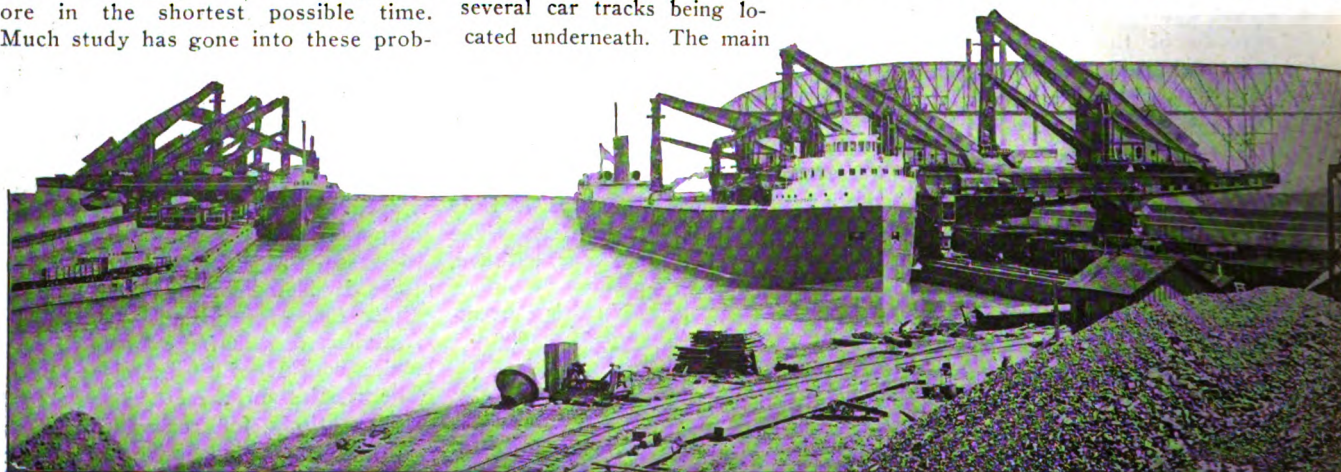


FIG. 2—ON THE DOCKS AT ASHTABULA, O., ARE INSTALLED EIGHT OF THESE ELECTRICALLY OPERATED ORE UNLOADERS—EACH MACHINE IS EQUIPPED ACCURATELY TO WEIGH THE ORE

The hoisting mechanism is located in a house on the rear end of the walkingbeam.

An additional unit comprises a receiving hopper which is located at the forward end of the main framework. This unit receives the ore discharged from the bucket. Outlet gates are provided in the hopper through which the ore flows into a larry. This larry travels on an auxiliary track which is suspended from the under side of the main girders.

The larry is readily moved so that its contents can be discharged into cars or on the storage pile. The machine shown in the illustrations has 15-ton buckets and is installed at Ashtabula, O. It is electrically operated throughout and its speeds are regulated so as to operate through a complete cycle of movements in 50 seconds. Eight machines of this type have unloaded seven ore vessels, with a combined capacity of 70,000 tons, in 22 hours, actual working time. At other unloading ports on the Great Lakes, machines of this type have unloaded boats holding 13,000 tons of ore in 3 hours and 25 minutes. From these figures it is readily seen that the machine is extremely efficient in operation.

In actual use it works as follows: After the vessel is docked and made fast, her hatches are opened and an unloading machine is moved opposite one of the open hatches. The bucket descends into the hold and after filling itself, the walkingbeam hoisting mechanism is actuated which raises the bucket. Then the trolley is traveled back so that the bucket is brought over the main hopper between the girders in the main framework where the contents are discharged. The bucket then goes back to the

vessel for another load. From the main hopper the ore is discharged into the larry to be deposited in cars or on the stockpile. The larry hopper is equipped with scales so that the contents are readily and accurately weighed.

But two operators are required. One, whose station is in the bucket leg, controls the movements of raising and lowering the bucket, traveling the trolley back and forth and moving the machine along the dock from one hatch to another. The other operator is stationed in a cab on the larry from which position he controls the movements of the larry, the operation of the larry gates and the weighing of the ore.

To resist the abrasive action of the ore, the buckets are equipped with manganese steel cutting edges. In addition to the vertical movement, the bucket has a rotary movement around its vertical axis. This is accomplished by ropes attached to a segment on the bucket leg.

The object of the rotary motion is to turn the bucket at right angles to the hatchway in order to get a greater lengthwise reach. This facilitates getting ore out from under portions of the deck between the hatches. The buckets open approximately 21 feet. When the ore is practically all removed from the vessel, it is necessary to throw it up in piles as shown in Fig. 7. This enables the bucket to get practically a full load, which it would not do if the ore were scattered in a thin layer over the tank-top.

The control equipment for these motors is of the magnet switch type throughout, with master controllers in the operator's cabs. Electric current is supplied by insulat-

ed conductor rails running the length of the main runways. Current is collected by means of pickup shoes. A similar controlling device also is employed for supplying the main current to the trolley. Conductor rails are attached to the main framework of the machine and the current collected from these rails by means of pickup shoes attached to the trolley.

The electric motors used for operating this machine are as follows, one motor being supplied for each item:

	Horsepower
Beam hoist	275
Bucket closing	120
Bucket rotating	25
Trolley travel	120
Hopper gates	100
Longitudinal travel	100
Larry travel	150
Larry gates	40
Total	930

In designing steering apparatus for vessels, the engineer is confronted with several complex problems. The device must respond quickly to the helmsman, must manipulate easily and, what is perhaps the most important, must stand up under severe stress when a sudden force is exerted on the tiller through the action of a heavy cross sea or when an undue strain is imposed by suddenly throwing the helm hard over to avoid a collision.

The device shown in detail in Figs. 5 and 6 was developed by the American Engineering Co., Philadelphia, and is the result of many years of gradual development in ship steering machinery. This device has a fluid connection directly to the rudder stock. The different parts are shown as follows: *A* is the tiller which is fixed to the rudder stock; *B* and *B2* are the hydraulic cylinders and rams which operate the tiller through the crosshead; *C* is the pump; *D* the electric motor; *E* the spindle which con-

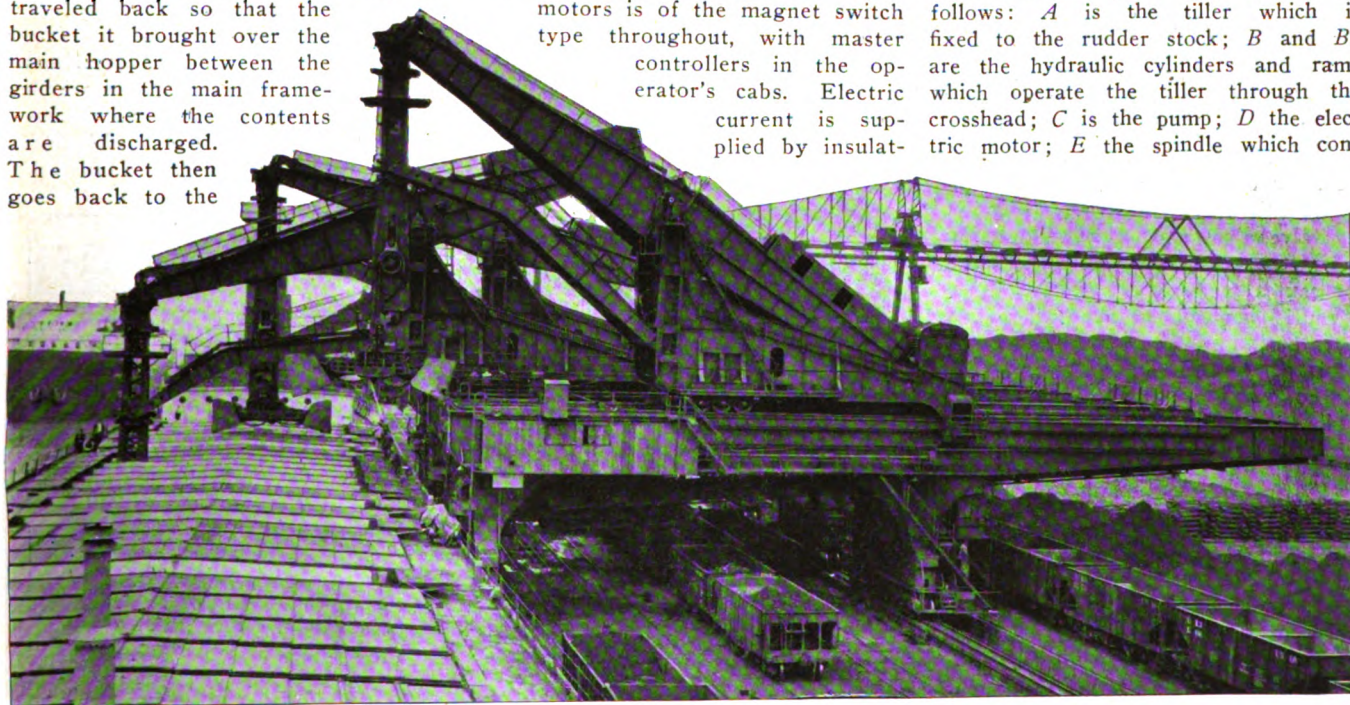


FIG. 3—UNLOADING ORE AT THE UNITED STATES STEEL CORP. DOCKS AT CONNEAUT, O.—THE ORE IS DEPOSITED DIRECTLY IN THE CARS OR DUMPED ON THE STOCKPILE AT THE RIGHT

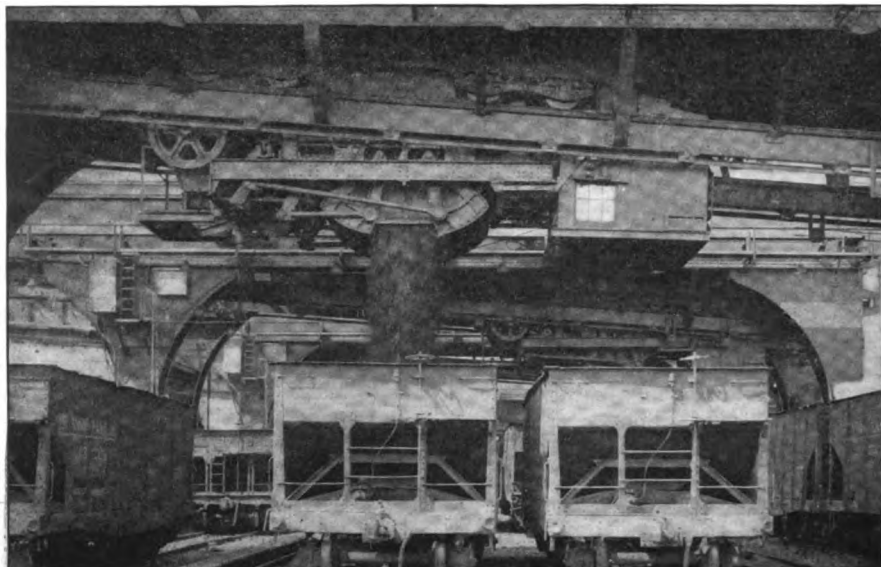


FIG. 4—LOADING THE CARS FROM THE SCALE LARRY WHICH WEIGHS AND DISCHARGES THE ORE

trols the operation of the pump; *F* and *F₂* the piping which connects the pump with the hydraulic cylinders; *G* the floating lever; *H* the connection between the floating lever and the telemotor; *K* the levers which connect the floating lever to the tiller, and *L* the spring-loaded by-pass valve.

When the device is in operation, the pump which is driven by a constant-speed motor, varies its stroke from zero, when the spindle is in central position, to a maximum when the spindle is moved off center to one side or the other. This motion varies the rate and the direction of flow of liquid from one cylinder to the other.

The spindle is operated from the steering station by the usual transmission system through link connections. The flow of liquid in the cylinders causes a compensating movement of the rams which moves the tiller. The floating lever, which is actuated by the rams, brings the spindle back to the neutral position which stops the flow of liquid. In cases where extreme stresses are suddenly encountered, the spring by-pass valve gives way which allows the rudder temporary relief. This, however causes pumping to begin and the rudder is immediately returned to its proper position as the stress is relieved.

It is pointed out that pumping starts with no perceptible lag as soon as the spindle is moved which causes the steerer to transmit motion to move the rudder to the required angle in the minimum amount of time. The hydraulic medium is lubricating oil which makes the working parts self-lubricating thus assuring easy working under all conditions.

The hydraulic cylinders, it is said, may be arranged in several positions about the rudder stock. In the accompanying illustration they are shown set athwartships. But little head room is

required for the device, so that the steerer can be placed in confined situations. In vessels where no electric power is available, a steam motor is used for operating the pump.

Electric Vessel Steerer

The device shown in Fig. 8 is an electric steering apparatus recently developed by the Benson Electric Co., Superior, Wis. It consists of three main units, a master controller, a set of electromagnetic relays and the steerer proper. When desired, a secondary controller is furnished. This device is placed in the upper wheelhouse. It contains no electrical apparatus whatever and is designed simply to operate the master controller which is placed directly below it.

The master controller is placed in the pilot house as shown in Fig. 8. Two electrical circuit making devices, one consisting of a number of copper contact buttons equally spaced and the other consisting of a round copper

ring, are incorporated in the master controller. Electrical connections are made by moving the handle at the front to starboard or port as desired. As the handle is moved, it picks up different electrical connections. To prevent the lever being left between two contact points, a compression spring is incorporated which enables operator to feel by contact whether the lever is in the correct position to make the desired connection. Two small electric lamps are arranged so as to light only when the rudder is in motion. This gives an indication of the fact that the rudder is moving.

The electromagnetic relays shown in Fig. 8 consist of two rear-connected double pole and one rear-connected single-pole electromagnetic contactors which are equipped with blowouts. They are designed to work directly across the line without the necessity of using auxiliary resistance. The relays are mounted on electrical slate, encased in an iron case with a hinged glass cover. A resistance for the dynamic brake of the telemotor is also mounted on the slate. The cabinet is placed in any convenient place, either in the fantail or the engine room.

The steerer proper as shown in Fig. 8 is located in the fantail. It consists of a 1-horsepower electric motor which is connected to the crosshead through a train of gears. The crosshead in turn is connected to the valve of the steam steering engine. The followup also is connected to the train of gears. This unit consists of two cast iron disks which are mounted on a shaft. One disk is stationary while the other revolves on the shaft that carries the worm gear.

Two collector rings are mounted on the revolving disk. One of these rings is divided into two equal parts which are insulated from each other. These collector rings make contact with buttons on the stationary disk. The fol-

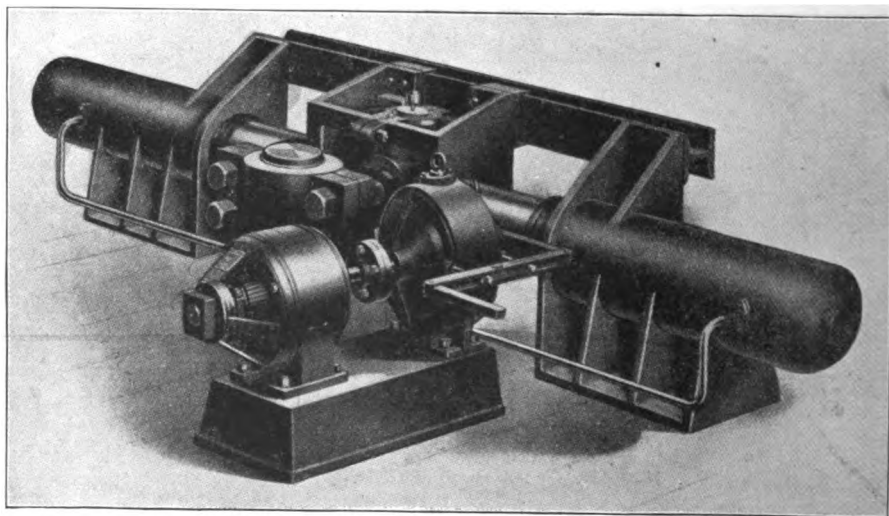


FIG. 5—ELECTRO-HYDRAULIC VESSEL STEERER DESIGNED FOR HEAVY DUTY

lowup is enclosed in a cast iron shell with a suitable cover. The entire steerer is covered with a sheet iron jacket which is provided with convenient handholes for oiling and inspection.

The electrical wiring consists of a conduit which leads from the base of the master controller to the relay cabinet and thence to the steerer. This conduit contains the multiconductor copper cable required for the electrical connection of the master controller to the relay, the relay to the switch board and to the steerer.

Device Operates Easily

In operation, the device works as follows: The helmsman moves the handle to the position required, either port or starboard, from the midship position. Thus an electrical connection is made with points on either side inside the controller. The first point on either side moves the rudder $2\frac{1}{2}$ degrees, the second and third points on either side increase the rudder angle $2\frac{1}{2}$ degrees while the fourth position adds 4 degrees and the rudder angle is correspondingly increased until the hardover point is reached.

When the helmsman moves the handle to any point, an electrical circuit is made through a contact button which is carried by the wires to the steerer and through a contact button and collector ring in the followup. The circuit is completed through one of the relay contactors in the relay cabinet. The relay completing the circuit is selected by the position of the controller as it is moved, either to port or starboard. This relay closes the primary circuit through the motor and starts it running in the proper direction. As the motor runs, it moves the cross head which unit, in turn, operates the steering engine valve. This engine carries the tiller and rudder to the desired direction and for the predetermined number of degrees.

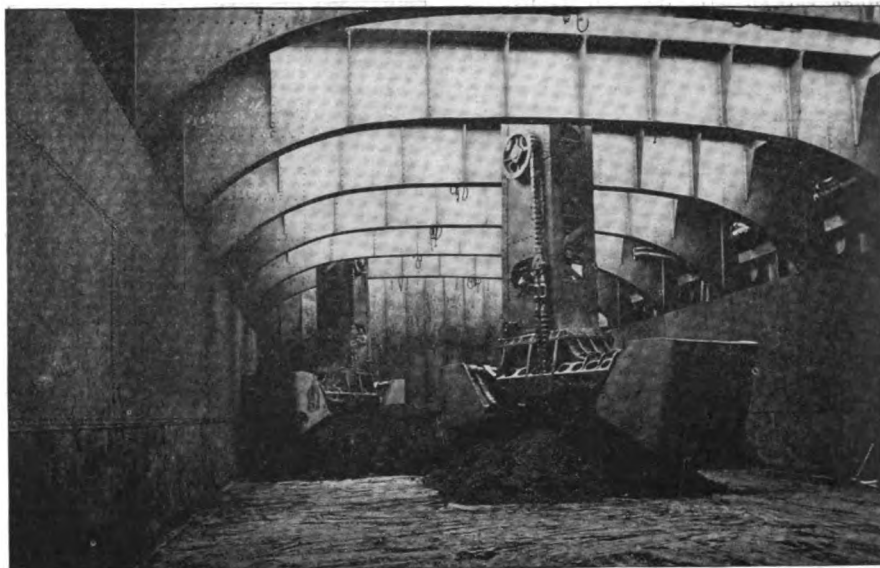


FIG. 7—GETTING OUT THE LAST OF THE ORE FROM THE HOLD OF A LAKE ORE CARRIER

house, it opens the circuit through the relay which causes the motor to stop. At the same time, the single-pole relay closes and sets the dynamic brake on the motor. This assures ready stopping. The crosshead stops with the motor which in turn stops the steam steering engine leaving the rudder in the desired position.

Gyroscopic Compass

The gyroscopic compass, a device developed by the Sperry Gyroscope Co., and fully described in THE MARINE REVIEW for March, 1919, is without a doubt a great aid to lake navigation due to the fact that it is absolutely non-magnetic. Thus the iron ore ranges near the northern lakes have no effect on this device. This makes the laying out of a course comparatively easy as magnetic influences need not be considered. Again, due to the fact that the gyroscopic compass points to the true north instead of toward the magnetic pole, the whole problem of laying out a course is greatly simplified. This compass has been used on

naval vessels for a number of years and rendered valuable service during the war. It is illustrated in Fig. 9, the cover at the bottom being removed to show the operating mechanism.

Compartment Condenser

In the operation of a marine condensing engine, it is essential to keep the condenser tubes clean, otherwise the condenser cannot be relied upon to work at maximum efficiency. The device shown in Fig. 10 is a recent development of the Wheeler Condenser & Engineering Co., Carteret, N. J. It is so designed that every tube can be readily cleaned while the condenser is in operation. The illustration clearly shows how this is accomplished. The condenser is divided into four compartments, each of which is equipped with valves which control the circulating water.

To clean the condenser when it is in use, the engineer shuts off the circulating water from one compartment, removes the cover, cleans the tubes, replaces the cover and turns on the water. Then he passes to the next compartment and repeats the operation, continuing until all four compartments have been cleaned. Thus, while one compartment is being cleaned, the other three are in full operation, temporarily taking care of the full amount of exhaust steam as it comes from the low-pressure cylinder.

Accurate Range Finder

Dating from the time the telescope was invented, efforts have been made to utilize this instrument for measuring distances for geodetic and military purposes. With the rapid development of modern gunnery during the last quarter of a century, the subject of accurate range finding has been

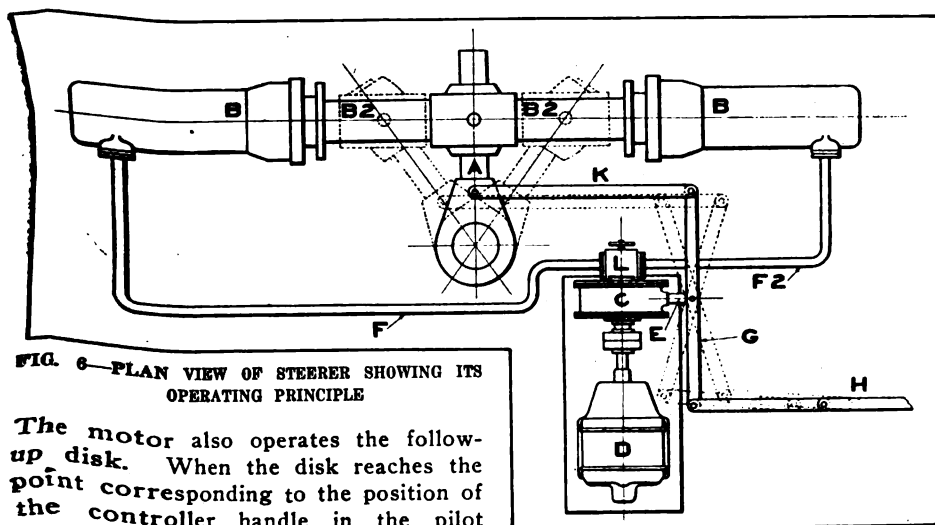


FIG. 6—PLAN VIEW OF STEERER SHOWING ITS OPERATING PRINCIPLE

The motor also operates the follow-up disk. When the disk reaches the point corresponding to the position of the controller handle in the pilot

given serious attention. This has resulted in the development of instruments of extreme accuracy valuable not only for obtaining accurate ranges for gun fire but for navigation purposes as well.

The device shown in Fig. 11 is a 1-meter erect-image coincidence range finder with a pelorus mount, especially adapted for navigation work. It is a product of the Baush & Lomb Optical Co., Rochester, N. Y., built especially for the Sperry Gyroscope Co., Brooklyn, N. Y. This instrument makes use of the trigonometrical solution of an isosceles triangle. It is equipped with a triple prism adjuster and a compensating measuring device. Two telescopes are provided which are trained on the object to be observed for distance. Then, by looking through the eyepiece, the navigator sees the image as shown in Fig. 13. When the instrument is adjusted to make the two sections of this image coincide, the scale over the image gives the distance in yards.

The optical parts, prisms and wedges, are embodied in a seamless brass tube. The optical tube is made of phosphor bronze while the eyepiece is mounted in the center of the instrument, inclined at an angle of 55 degrees to the horizontal plane. Directly above the eyepiece is a knurled knob which actuates an astigmatizer into and out of the path of light. This astigmatizer is used in taking observations of lighted objects at night when it would be difficult to make a coincidence. The astigmatizer serves to distend or stretch the luminous point into a vertical line, which facilitates making the coincidence.

The wedges are of the rotating type and are located between the left objective and the end of the range

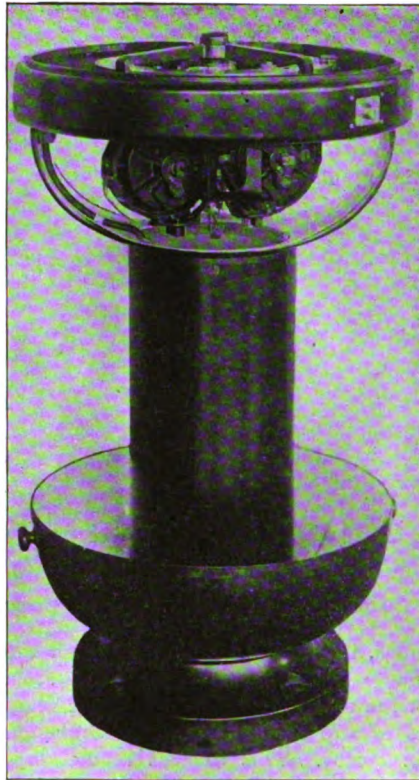


FIG. 9—MASTER GYROSCOPIC COMPASS WITH THE CASE REMOVED TO SHOW THE MECHANISM

finder. The range scale is circular and is attached to one of the rotating wedge housings, the image of the scale being transmitted by the objective to the ocular prism where it is reflected into the eyepiece. The

device is said to be easy to manipulate and while rigid in construction, its weight is comparatively light. With the pelorus mount it weighs 49 pounds.

By the use of the range finder in connection with any compass it is

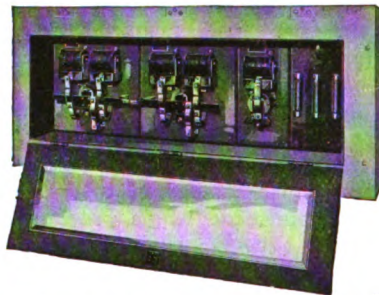


FIG. 8—THE MASTER CONTROLLER IS AT THE LEFT, THE CENTER VIEW SHOWS THE MAGNETIC RELAYS WHILE THE ILLUSTRATION AT THE RIGHT IS THE TELEMOTOR

possible for the navigator accurately to fix his position with but one sight of any charted object. This makes unnecessary the running of two, four or six-point bearings. It is pointed out by Lieut. John H. Clark, Cleveland representative of the Sperry Gyroscope Co., that this should be an invaluable aid to Great Lakes' navigators who, because of fog, snow or rain, are frequently unable to run out a bearing.

To illustrate, the navigator of a vessel leaving Detour and approaching

the west shore of Lake Huron in a snow storm is uncertain of his position because of the changing conditions of currents at the head of Lake Huron. During a lull in the storm, he can see Presque Isle light but while running out a bearing the snow shuts in again leaving him still uncertain regarding his distance seaward and his certainty of clearing Middle island.

With the range finder, he would have only to take a compass bearing and distance during the lull and then plot this on the chart to fix his position accurately. By this means he could determine his distance beyond. The instrument should be a further aid in running the rivers in semithick weather.

Fresh Water Still

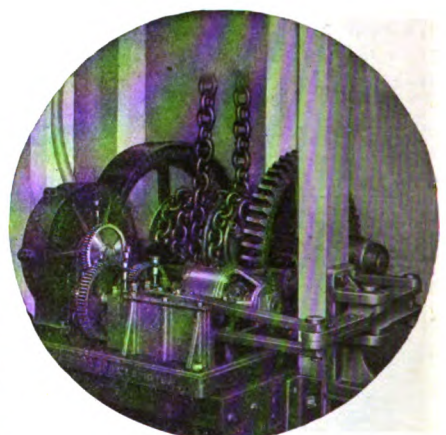
The problem of securing an unlimited supply of fresh water for drinking and culinary purposes aboard Great Lakes' vessels has been raised by government officials who ruled that the constant passage of vessels and sewage from numbers of large cities contaminated the water.

To secure an ample supply of pure water at all times, the apparatus shown in Fig. 12 was developed by the Jewell Water Improvement Co., Chicago. This is a simple device that can be installed in any convenient place. The still shown in the illustration was installed in the upper part of the engine room hatch, near the upper grating. In this location it does not take up any unnecessary room and is easily reached for adjustment and operation.

It is said that this device is simple to operate and that it can be used for long periods without any other attention than an occasional adjustment. It



finder. The range scale is circular and is attached to one of the rotating wedge housings, the image of the scale being transmitted by the objective to the ocular prism where it is reflected into the eyepiece. The



has a capacity of 25 to 30 gallons of water an hour and is automatic in operation, being controlled by three valves, one each for steam, blowoff and water supply. The main body parts are cast iron accurately machined

at the joints. The other parts are of copper and brass protected with a heavy coating of tin where they come in contact with the water. The resultant product is aerated and equally as cold as the inflowing water supply. The device makes use of the well known distilling principle wherein the water is heated to boiling point by steam coils. The vapor arising is condensed and as the impurities in the water do not vaporize, it is readily seen that they do not pass over into the condensation part of the apparatus. These stills are in use on a number of Great Lakes vessels.

Engine Alarm

In making landings and in passing through locks, it is of the utmost importance for the navigating officer to be certain that the orders sent through the engine room telegraph are properly received and carried out. Thus, if the telegraph is moved to full speed astern he should know for a certainty that the engine is promptly reversed. Instances wherein the telegraph has failed to work are on record, one such accident causing a lake vessel to smash through a canal lock. This resulted in her going over the sill sustaining severe damage to her bottom.

To eliminate accidents of this kind and to make sure that the engine is running as directed by the man on the bridge, the engineers of the Pittsburgh Steamship Co., Cleveland, developed the engine alarm shown in Fig. 14. The engine rock shaft is equipped with an electrical connection which makes contact with an electric terminal in both the go-ahead and astern positions. The telegraph in the engine room is also equipped with

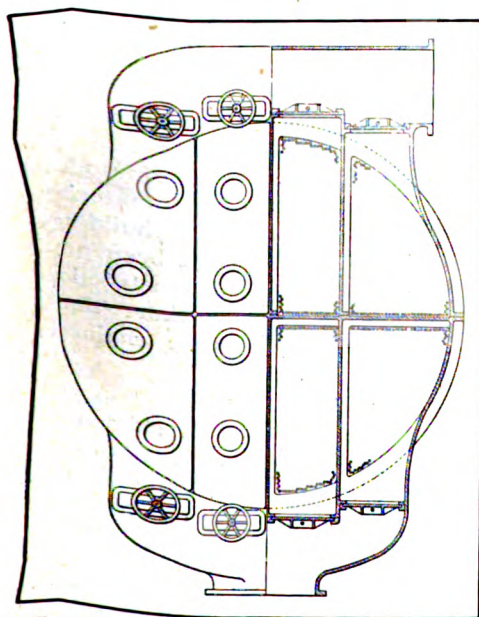


FIG. 10—CONDENSER WITH FOUR COMPARTMENTS ARRANGED FOR READY CLEANING

two terminals so arranged that when it is moved to designated speeds astern, an electrical connection is made which rings a bell in the engine room and a buzzer in the pilot house until the order is carried out. The same result is true if the telegraph is set at ahead positions when the engine is running astern. Electrical current is supplied by four dry cells. This device has been installed on all the vessels of the Pittsburgh fleet.

Boiler Water Circulator

In operating Scotch marine boilers it is of the utmost importance that the inside of the boiler be kept clean, otherwise mud and 'sludge' will accumulate on the heating surfaces to the detriment of efficient operation. The device shown in Fig. 15 is an appliance designed to keep the water in boilers of this type in constant circulation. It utilizes the common principle that water readily rises as it

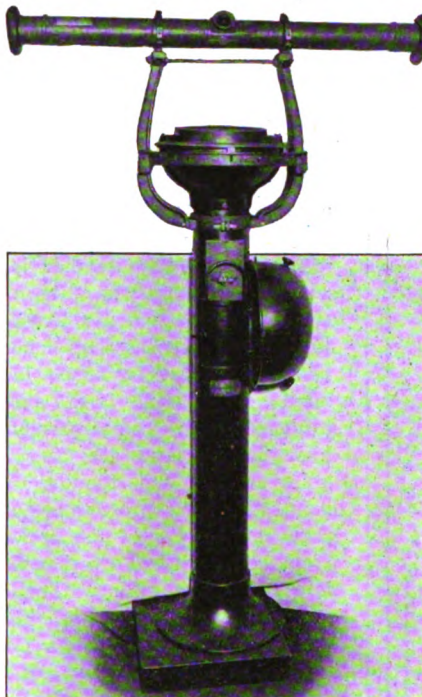


FIG. 11—LONG DISTANCE COINCIDENCE RANGE FINDER

becomes heated. Thus in a Scotch boiler, where the water is not of an even temperature throughout, due to the fact that the water directly over the furnaces heats first, the law of gravitation is utilized.

Utilizes Well Known Principle

The valve chamber in this device is situated in the top of the boiler to which is fitted the conductor pipes. Thus it soon absorbs heat from the surrounding water. This heat is conducted to the water contained in the valve chamber with the result that this water starts to expand in volume and as its specific gravity changes, it

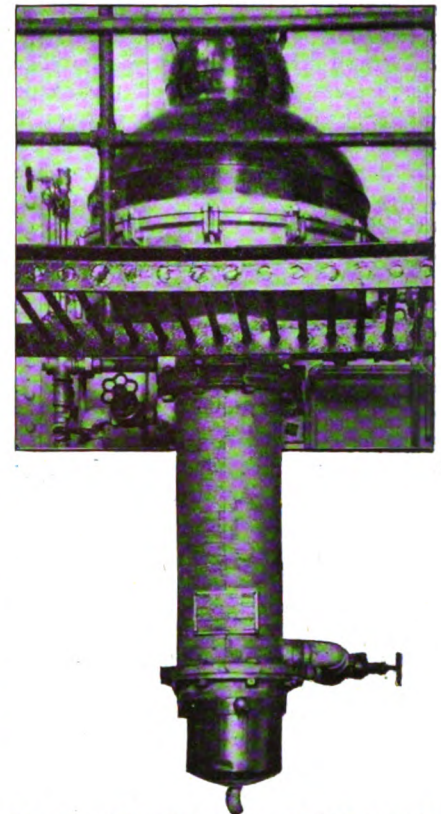


FIG. 12—AUTOMATIC STILL FOR FURNISHING PURE DRINKING WATER

finds its way out of the discharge port in the top of the valve chamber. The water thus expelled is replaced by the water in the conductor pipes which lead to the bottom of the boiler. Thus it is readily seen that there will be a continual circulation of water as long as there is a difference in temperature between the bottom and the top of the boiler.

When the operator desires to stop the circulation in the boiler it is only necessary to move the pointer to the

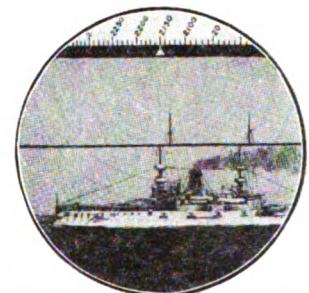


FIG. 13—HOW THE COINCIDENCE IS MADE

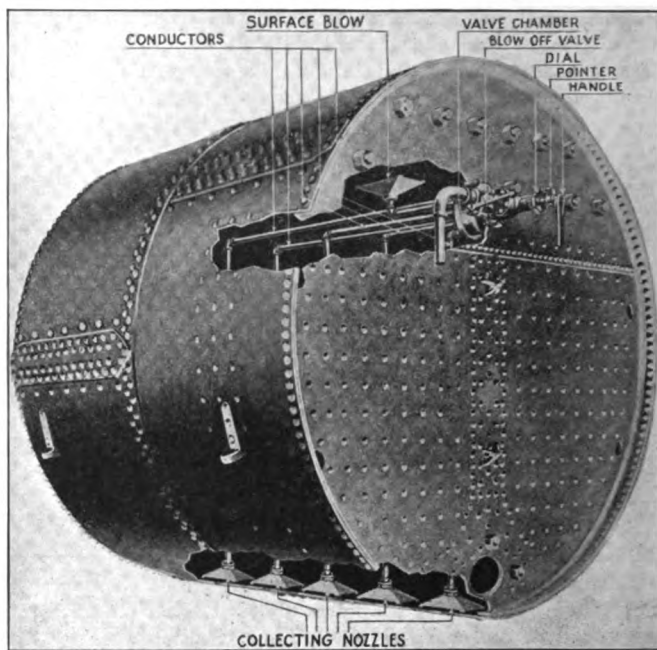
position marked: Circulator closed. It is pointed out that this feature is of especial value when operating in harbors, rivers and shoal water, particularly when vessels are stirring up mud with their propellers.

The device is operated as follows: First, the main blowoff valve is opened. Then the handle on the valve shaft is turned until the pointer is even with number one on the dial

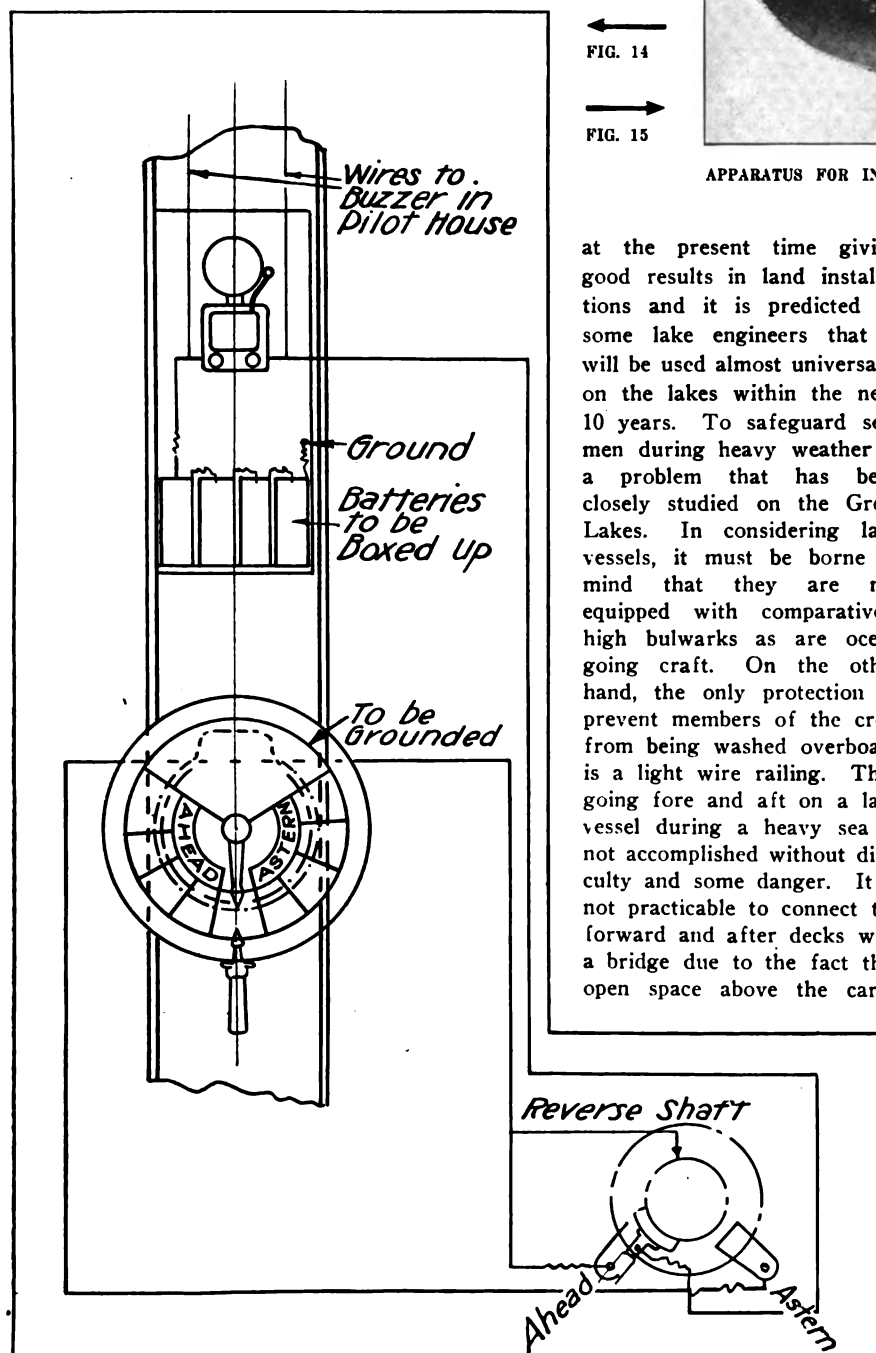
plate. This opens communication between number one collecting nozzle and the main blowoff pipe. The pressure on the boiler and the shape of the collecting nozzle produces a current around and into the collecting nozzle. These currents produce a sweeping action extending approximately six inches on each side of the collecting nozzle.

When all the sediment and small pieces of scale are removed from this part of the boiler, the handle is turned until the pointer is even with the next number on the dial, the operation is repeated and so on until a complete revolution has been made. In this way the sediment and scale forming

ingredients are removed from the bottom of the boiler. This device is in operation on a number of Great Lakes vessels. Another recent innovation on Great Lakes' vessels is the use of superheated steam in order to secure a substantial increase in the horsepower per ton of fuel. Superheated steam is



APPARATUS FOR INSURING PROPER CIRCULATION OF WATER IN SCOTCH MARINE BOILERS



ELECTRIC ENGINE ROOM ALARM—A BELL RINGS IN THE ENGINE ROOM AND IN THE WHEEL HOUSE IF THE TELEGRAPH ORDERS ARE NOT CARRIED OUT

at the present time giving good results in land installations and it is predicted by some lake engineers that it will be used almost universally on the lakes within the next 10 years. To safeguard seamen during heavy weather is a problem that has been closely studied on the Great Lakes. In considering lake vessels, it must be borne in mind that they are not equipped with comparatively high bulwarks as are ocean going craft. On the other hand, the only protection to prevent members of the crew from being washed overboard is a light wire railing. Thus going fore and aft on a lake vessel during a heavy sea is not accomplished without difficulty and some danger. It is not practicable to connect the forward and after decks with a bridge due to the fact that open space above the cargo

hatches is imperative. To allow members of the crew to move fore and aft in perfect safety, all lake vessels now carry a stout wire cable located well above the deck. Seats patterned after an ordinary boatswain's chair traverse this cable enabling the man who happens to be aft and wishes to go forward in heavy weather, or vice versa to make the journey in absolute safety. Due to the length of the largest freight boats, some 600 feet, the word journey can be taken literally.

To Build Terminal

Plans have been drawn for a new terminal to be built at Baltimore on the south side of the Patapsco river. Eight piers, 1800 feet long and 300 feet wide with 400-foot slips between will be constructed. The piers are to have double-decked sheds with adequate equipment of electric cranes and conveyors. Each pier will be served with five railroad tracks. To accommodate small manufacturers whose materials are imported, manufacturing buildings to be built near the pier have been projected. It is said that construction work will begin within a short time. F. W. Kassenbaum Jr. is the engineer in charge.

Barclay, Curle & Co., Ltd., shipbuilders and engineers, Whiteinch, Glasgow, Scotland, constructed the hull of the motor vessel GLENAPP, a description of which was published in the September issue of THE MARINE REVIEW. In that article, Messrs. Harland & Wolff, Ltd., Belfast, Ireland, were listed as the builders of the vessel.

New Blood in American Shipping

Demand for Vessel Tonnage Has Brought Powerful New Interests Into Marine Field in Competition With Older Lines

BY REUBEN A. LEWIS JR.

WITH the unparalleled increase in tonnage flying the American flag, there has been a similarly prodigious growth in the personnel of vessel operators and managers. As the American shipyards responded under the stress of war to the appeals of all nations for bottoms to move the necessities of life to their warriors and civil populations, there appeared new figures in the American shipping world to array themselves by the traditional powers.

During the grim days of 1916 and 1917 when it appeared that the salvation of nations depended upon ships, fortunes beckoned to almost anyone who could obtain a charter of a sea-going vessel. Ships that lay warped to their piers in 1914 while brokers offered \$3 and \$4 for time charters brought the unprecedented quotations of 63 shillings from the eager charterers. In those days, when original values in tonnage had trebled and old wrecks were salvaged and restored at great advantage, it was but natural that alert and keen-minded men sought to convert their opportunities into gold.

New blood, infused into American shipping, enjoyed a development, but the pioneers—the American line, the American-Hawaiian, Luckenbach, Grace, Dollar, Bull and Munson—reaped a rich reward. Just two months before the outbreak of war, the Luckenbach line received the last of eight cargo carriers that had been constructed for its services. The Munson lines, to which British yards had delivered the *Munwood* and *Mundale* in 1913 and 1914, received 14 cargo carriers from American shipbuilding plants during the period intervening from 1914 to 1917. The fleet of the American-Hawaiian Steamship Co. had grown until it boasted of the largest ocean-going tonnage operating under American registry.

It would be almost useless to recount how the older established lines, accustomed to keen competition and lean years, profited from the unprecedented rates and charters that were created by the war. While exact figures as to earnings are of course not available in most cases, there is no gainsaying the fact that virtually every one of the old established companies made more than a million dol-

lars. The financial statement of the Pacific Mail Steamship Co. showed that whereas it had made 30 per cent on an investment of \$1,030,000 in the Panama fleet in 1915, the returns for the stockholders on the same line in 1916 represented 83 per cent. In 1917 and 1918, the returns were even more substantial. For the six months ended June 30, 1919, the company, which operated three services, showed a net income of \$1,240,759.53.

The good fortune of the Pacific Mail was paralleled by virtually every other American company. Long standing mortgages and bonded indebtedness were paid off. The capital stock appreciated sharply, due to the increment in the value of the tonnage and the sales of ships. Huge reserves for future building programs were created. Thus, when the United States requisitioned the fleets on a modest bare boat basis ranging from \$4.15 to \$6 a ton, the older American companies were in a healthy, vigorous condition for whatever might come—be the times lean or opulent.

Attracts Enterprising Men

It was but natural that the opportunities should attract new and enterprising personalities, for in these times there was almost utter disregard on the part of the shipper for the expenses involved in dispatching a cargo from one port to another. And during those eventful days when stout-hearted skippers bravely invaded waters infested with U-boats and mines, new companies which promise to remain as permanent fixtures in the shipping world came into being.

The advent of the Kerr Steamship Co. into the maritime sphere is tinged with romance and wonderment. The head of the line, H. Farquharson Kerr, born in Scotland and for years a resident of the West Indies, had been identified in shipping circles for some years, but in a rather unpretentious position of president of the Caribbean Steamship Co. and as an executive in other small ventures.

In 1917, after the government had regulated the maximum rates that any line might charge for carrying tonnage transatlantic, Mr. Kerr and his associates, among whom were A. E. Clegg, later assistant director of the division of operations for the ship-

ping board, negotiated for the purchase of eight Austrian steamers, with a register of 51,086 deadweight tons. The shipping board, in sanctioning the deal, gave to the purchaser the privilege of making three free trips, specifically declaring that the operators were not to be bound by the inexorable blue book.

At any event, the eight ships completed three free voyages and the gossip was that the vessels more than paid for themselves on the first trip, for, at that time voyages to Mediterranean ports requiring passage through lanes of German and Austrian submarines enabled the company to obtain as much as \$160 a ton for cargo. It is an easy matter to speculate as to the revenues that Mr. Kerr and his confreres derived from the voyages that preceded their requisition by the United States government.

When the shipping board turned back to the owners the vessels that it had commandeered, the Kerr interests took vigorous measures to widen the scope of their services. Lines were inaugurated to South America, France, Great Britain, Scandinavia, Spain and Japan. When trade with Germany was licensed, a Kerr ship was the first American commercial vessel to put in at Hamburg. Traffic experts, formerly with the Hamburg-American and the North German Lloyd lines, were added to the personnel of the departments.

Several weeks ago, announcement was made of the formation of the American Ship & Commerce Corp. Its sponsors said that it was created for the purpose of serving as a holding company for the Kerr Navigation Co., owner of the ships operated by the Kerr lines, and the William Cramp & Sons Ship & Engine Building Co., one of the oldest shipbuilding firms in the United States. Previously Mr. Kerr had stated that a valuable site situated near the stock exchange had been purchased for the erection of a 12-story building, which would serve as a permanent home for his company.

Among the directors in the American Ship & Commerce Corp. are J. Leonard Replogle, a prominent New York financier; Parmely W. Herrick, Cleveland, and Percy M. Chandler, banker. Kermit Roosevelt, second son

CREW COST PER DAY
Based on Award of July 28, 1919

POWER TONNAGE	COAL BURNERS										OIL BURNER									
	CLASS A - 1		CLASS B - 2		CLASS C - 3		CLASS D - 3		CLASS E - 3		CLASS F - 3		CLASS G - 3		CLASS H - 3		CLASS I - 3		CLASS J - 3	
	Over 20,000		Over 15,000		12,000 to 20,000		7,500 to 12,000		5,000 to 7,500		Below 5,000		Below 5,000		Below 5,000		Below 5,000		Below 5,000	
	No.	Wages	No.	Wages	No.	Wages	No.	Wages	No.	Wages	No.	Wages	No.	Wages	No.	Wages	No.	Wages	No.	Wages
	Meals	Room	Meals	Room	Meals	Room	Meals	Room	Meals	Room	Meals	Room	Meals	Room	Meals	Room	Meals	Room	Meals	Room
	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance	Allowance
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Single Screw	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Twin Screw	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Master	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1st Officer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Officer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3rd Officer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4th Officer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Carpenter	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Carpenter's Mate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boatswain	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Quartermaster	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Abse Seaman	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ordinary Seaman	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Deck Hand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GRAND TOTAL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chief Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1st Assistant Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Assistant Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3rd Assistant Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4th Assistant Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Junior Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerator Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Asst. Refrig. Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Electrician	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Deck Engineer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pumpman	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Oilier	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Water-tender	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Storeroom	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fireman	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wiper	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Coal Raiser	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GRAND TOTAL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chief Steward	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Steward	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chief Cook	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Cook & Baker	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Cook	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Stew	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vegetable Cook	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cooks Mate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Baker	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Baker	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Steam Cook	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Butcher	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2nd Butcher	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Storekeeper	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Storekeeper	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pantryman	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Endman	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Deck Messboy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Deck Messboy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Steward	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Steward Apprentice	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Deco	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chief Radio Operator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Asst. Radio Operator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GRAND TOTAL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sea subsistence cost	\$171.72																			
Crew complement based	S/S Wainwright																			
	S/S Amphion																			
	S/S Oconee																			
	S/S Despatcher																			

HOW THE DAILY COST OF OPERATING AMERICAN VESSELS IS DIVIDED

of the late Theodore Roosevelt, has accepted the position of secretary of the holding company, and has started out with characteristic Rooseveltian zeal to learn something of the rudiments of shipping.

There is speculation as to whether the fortunes of the Harrimans will play as important a part in the development of American ocean-borne transportation as they did in the growth of railroads. Averill Harriman, heir to the Harriman millions, is now engaged in the operation and management of ships. His first investments came in shipbuilding when he assumed control of the Merchants Shipbuilding Corp. He is the principal owner of the two plants of this concern located at Bristol and Chester, Pa. Early in 1919, Mr. Harriman organized the Independent Steamship Corp. for the purpose of operating ships. And forthwith the company, which had Richard H. M. Robinson, formerly a naval constructor and then managing director of the Lake Torpedo Boat Co., as its directing genius, inaugurated a unique program. Two lines were established to the Near East, virgin fields which had never been invaded by an American company.

Later it became known that Mr. Harriman had purchased one-fifth of the control in the American-Hawaiian Steamship Co. Credence is given to the report that Mr. Harriman will use the facilities of his shipbuilding plants for the construction of a fleet for the Independent lines. While Mr. Harriman may be said to be deeply interested in shipping, he has shown no inclination to divorce himself from his railroad interests.

Growth Under Spur of War

The possibilities of the Globe line becoming an important factor in American shipping are discussed, inasmuch as Gaston, Williams & Wigmore are the owners. During the war, the corporation obtained huge orders from the allies, and, to assist in the movement of tonnage, purchased six cargo carriers, two of which were motor ships and three auxiliary schooners. With these ships as a nucleus, Gaston, Williams & Wigmore created the Globe line. Supplementing them with shipping board tonnage, the corporation has inaugurated regular services to Finland and has indicated that it would further invade the general shipping field by operating regularly to South America.

Perhaps there is no more spectacular personality born of the war than Phillip De Ronde, the president of the Oriental Steamship Co. Without any previous experience in shipping,

Mr. De Ronde started with a capital said to have been as meager as \$10,000 and invaded the field. He had been serving as a consular representative in the United States for a South American country although he was an American. Mr. De Ronde secured contracts to be filled for the French government. In order to move these commodities, he became interested in the chartering of ships and later purchased several. A steamship line to France was the outgrowth of these activities and later, out of his earnings, Mr. De Ronde bought the Donald Steamship Co. The Oriental company directed 170,000 tons of shipping board tonnage during September and had extended its services to the Black sea ports.

The rise of Lawrence Smith in the shipping world was perhaps just as meteoric. When Italy joined the allies in the war, Mr. Smith gained a commission to buy horses and cattle for its military forces. It became necessary for him to obtain bottoms to send the stock to Genoa, and this caused him to delve into the intricacies of charters and ship purchases. A few months later he concluded a deal with the American-Hawaiian for the acquisition of two of its large cargo carriers, and subsequently added other tonnage to his fleet. For more than a year, Mr. Smith maintained a line to Genoa. When he disposed of his ships at greatly increased figures, this was discontinued. However it is understood that Mr. Smith may be regarded as a permanent personality in maritime affairs.

Perhaps no company has enjoyed a more rapid expansion than Moore & McCormack, which was organized in New York in 1913. Directed by young, enterprising men, the company started in a rather modest way, but developed fast. Regular services to the Baltic ports, South America, Ireland, South America and Germany are being maintained at the present, with a fleet of more than 125,000 deadweight tons.

Enjoys Rapid Growth

In 1916, Harriss, Magill & Co. was organized with a capitalization of \$100,000. J. P. Magill, head of the traffic department of the Union Sulphur Co. for years and later an independent charterer of ships, was associated with Mr. Harriss, a Texas cotton man. Operating regular services from Norfolk, Va., Galveston, Tex., New Orleans and Savannah, Ga., the company has grown amazingly since spring. The recent purchase of an 8-story building in the lower Broadway district and the announcement that regular lines from New

York are planned have indicated rather plainly that the company will make a bid for a real position.

The Cosmopolitan Shipping Co., which grew out of the Federal Shipping Co., has advanced steadily since its inception in 1916, with August F. Mack, formerly traffic manager for the United States Steel Products Corp., as its directing head. Associated with Mr. Mack were eight men, the majority of whom were interested in financial operations and who knew relatively little of maritime affairs. At the present time, the company operates six regular services and directs nearly 200,000 deadweight tons for the United States shipping board.

In Boston, the growth of the American merchant marine has enabled several interests, long identified in shipping, to expand from operators of small ventures to directors of substantial transoceanic corporations. The Coastwise Transportation Co. for more than 20 years a factor in the coastwise trades, embraced the opportunity to enter into the transatlantic and South American fields. With Capt. John G. Crowley, a pioneer with years of seagoing experience at the helm, the company has a fleet of 11 ships of its own and has secured the allocation of nearly 100,000 tons of shipping board vessels.

From Towboats to Liners

C. H. Sprague & Sons, operators of towboats and barges before the war, have enjoyed a similar expansion which is attributed in a large measure to Eugene E. O'Donnell, the marine manager. J. S. Emery & Co., with Ralph C. Emery, a representative of the second generation of this old New England family as its head, has branched out into the international sea ventures.

Of the new companies, the creation of the wartime period, the Shawmut Steamship Co. stands out prominently. William H. Randall, schooled in the craft by long standing association with the Emerys, has served as its chief executive. The company has a fleet of three cargo carriers and has just contracted for two new ships.

In the south, the rise of the Strachan Shipping Co., Savannah, Ga., and the remarkable growth of the Pacific Steamship Co., Seattle, in the west, have been regarded as mildly sensational. H. F. Alexander, president of the Pacific line, has risen by his record on the western coast to be regarded as one of the foremost figures in the American shipping world.

The wooden ships, built by the Emergency Fleet corporation served as the means of bringing the Brooks

Steamship Corp., the Pacat Steamship Corp. and the Triangle Steamship Co. into the operating field. Brooks is operating the 11 wooden ships purchased by the Nacirema Steamship Co. from the shipping board, but is said to have plans for the acquisition of a steel fleet. Pacat's experience with the eight wooden vessels is said to have been so unsatisfactory that it has indicated the intention of turning them back to the government when the time charters of one year's duration expire. Rumor has it that the Triangle company will enter into an amalgamation with Boston companies.

When the President's proclamation permitted the registry of foreign built vessels under the American flag, there were several companies, which formerly operated under the laws of other

mercial deep-sea fleet of 1728 steel ships of registers ranging from 2500 deadweight tons and upward. According to the latest official estimates, the merchant fleet will be constituted as follows:

	No.	D.W.	Tons
2500 to 5000 d.w.t....	552	1,871,672	
5000 to 5999 d.w.t....	199	1,014,575	
6000 to 7499 d.w.t....	76	520,240	
7500 to 8500 d.w.t....	195	1,480,710	
8500 to 9999 d.w.t....	543	4,934,814	
10,000 and over.....	163	1,848,921	

Pending the formulation of a definite policy as to the disposition of the merchant fleet, the shipping board has turned the vessels over to private companies to be operated for the account of the government. Under the terms of the agreement, the operators, designated by the federal board,

The operator's compensation is fixed upon the gross revenues that are derived from freights. The agreement allows the operator $2\frac{1}{2}$ per cent of the gross ocean freights on general cargo and $1\frac{1}{4}$ per cent on bulk. Certain fees are allowed the operator for expenses incurred for facilities and services required in foreign and dependency ports, the practice being generally to allow what was formerly paid in those ports by the private companies. In order to get the percentage on gross ocean freights, the steamship lines must attend to a myriad of details, and must have an organization to book freight, issue the various forms and attend to the multiplicity of details incident to dispatching cargo.

It is generally admitted by both



NEW FACES IN AN OLD BUSINESS—FROM LEFT TO RIGHT, H. FARQUHARSON KERR, RICHARD H. M. ROBINSON, AVERILL HARRIMAN

nations that became Americanized. The Barber Steamship Co., for decades one of the most prominent factors in the Far East and in African waters, changed from the British flag to the Stars and Stripes. Barber must be reckoned as one of the shipping companies best equipped financially and in point of experience to meet any conditions.

Since the first of 1919, it has been a decidedly uneventful week that did not witness the organization of a new shipping corporation with a capitalization fixed at figures running from a million and upward. There was never a time when it was easier for an American organization to enter the shipping field than at the present, owing to the peculiar conditions that exist.

When the program of the Emergency Fleet corporation is completed, the United States will have a com-

are subject to no chances of sustaining losses. Briefly the operators, especially the newcomers, are being schooled in the business of ship operation and management at no expense to themselves, for there are no penalties invoked for any slips or evidences of inexpertness.

Under the manager's agreement, the company selected must look after the physical end of the ship's operation. It must attend to the details of manning and supply, as well as to see that arrangements are made promptly for necessary repairs. The shipping board pays \$400 a month to any company for managing a vessel, except that the fee is reduced to \$350 for all ships in excess of five. The shipping board requires that the company shall maintain a competent organization, consisting of a port captain, a port engineer and, in case it has more than five ships to manage a port steward.

operators and managers that the agreement enables companies to operate at a small profit, sufficient to pay expenses and fair salaries to the officers. However, it is manifestly impossible to get rich on the fees and commissions in force, but since the system of allocations was put into vogue the steamship companies have bid eagerly for the privilege of handling ships on this basis.

By virtue of this arrangement, the smaller and newer companies are gaining experience in the shipping business that they could have ill afforded to obtain under the old competitive system. The government is making it possible for the "mushroom companies," as some older lines prefer to call their rivals, to get their bearings and to learn some of the tricks that tend toward economies. The pioneers have been afforded the

task of big-scale operation. Needless to say, men, who never before had an inkling as to the mechanics of shipping, have become interested in its various ramifications and no one can deny that this will be invaluable to the American merchant marine later on.

The present system has its critics. Some of the most astute figures in the shipping world contend that it is imperative if the merchant marine is to be perpetuated, that these companies be permitted to buy ships for operation and management while freight rates are high and margins of profit are large. Because, they contend, there will come a time when these companies must practice every economy if they are to survive.

Then what of this new blood that has been infused into American shipping? Will it stimulate and add to the power of the merchant marine, or will it prove weak and yield when the war of rate cutting with the foreign nations comes?

Some of the companies that have been born of the war have great financial reserves, but the greater number of them have limited resources. Generally speaking, the heads of the lines, even among the smaller ones, are executives with experience derived from previous associations in the shipping world. However, it is generally felt that the organizations under them are lacking in planning and judgment which are regarded as essential for continued successful operation.

The foreshadowing of competition in the shipping world has been seen. Since the signing of the armistice, British companies have cut their rates 50 per cent and the outstanding American executives admit that they hear further reductions are coming. A marked drop in freight rates next spring is expected in England, according to E. M. Raeburn, director general of the British ministry of shipping who recently returned from a conference with men high in the councils of the United Kingdom. There is not one dissenting voice but that there will be a general lowering of freight rates within the next few months. The action in August of the American-Hawaiian line in chartering out its vessels for one year at \$9.50 a deadweight ton per month may be interpreted as substantiating the belief that there is a harder time ahead for American shipping.

The United States, having granted substantial increases in wages to the officers and men in July, has the highest scale of wages in the world. It is true that the tendency in Great Britain, France, Italy and even Japan

is for a similar upward trend, but it is not generally believed that they will reach the American level.

While some of the extremists believe that rates will drop precipitately within the next year, there are others, and they are in the majority, who predict that rates will never drop to the level of 1914 and that the present scale will be substantially maintained for the next two years. They point to the increased export movement from the United States to the Far East and South America, and to the necessity of America buying more from other nations.

No small consideration as regards the future of the American merchant marine will be the policies that are adopted by congress, and the prices and terms upon which the shipping board offers its tonnage to private interests. One of the most hopeful signs, according to the operators, is the awakened interest in the merchant marine as manifested by the desire of congress to alter the mortgage laws, thereby enhancing the value of ship securities, and the determination to learn whether the present navigation laws may not be modified so as to place American tonnage more on a parity with vessels operating under foreign registry.

Less than a decade past, the spectacle of 10 huge vessels, flying the Stars and Stripes, would have been hailed as a grand review of the American transoceanic fleet. Today it would not be an uncommon sight in any of the principal ports of the world.

On Sept. 16, 28 American companies were directing fleets with registers exceeding 100,000 deadweight tons. The International Mercantile Marine, in addition to its own nine ships aggregating 98,596 deadweight tons, controlled a total of 713,830 tons. The Pacific Steamship Co., Seattle, served in the capacity of operator or manager or in the joint role for 62 government-owned vessels, giving it a tonnage afloat of 428,940 deadweight tons. In respect to the tonnage controlled, the other American companies rank: Grace, Munson, Barber, Luckenbach, Kerr, Bull, Matson and the Ward line.

U. S. Wartime Ships Prove Well Built

(Concluded from page 505)

known that that of United States ships is as severe as inspection methods applicable in foreign yards.

Great Britain is the greatest foreign shipbuilding nation and inspection methods in that country are con-

sidered as being representative of those obtaining in foreign shipyards. Inspection in the older yards of the United States compares most favorably with that in British yards. The manner of inspection is similar, each of the work in his department. New yards in this country were for a time at a disadvantage as it was necessary, due to the emergency, to employ less skillful and experienced workers, but inspection now in force in American yards is equally as careful as that in foreign yards.

The requirements for machinery inspection are the same in both the United States and Great Britain, a chief engineer's certificate being essential for men employed in this work. The inspection of safety appliances and equipment by the bureau of steamboat inspection of the United States department of commerce corresponds to that of the British board of trade. The agent of an important line entering New York reports recent major repairs to one of their vessels in New York as equal to work done in any British yard.

Sailings by shipping board vessels also are interesting proof of their able performance. On Sept. 16, 1919, the number of steam-propelled cargo carriers in service and actually operating for the account of the shipping board was 1143, and their deadweight tonnage or cargo-carrying capacity was 6,509,168 tons. The number of sailings for the two months from July 16 to Sept. 16 to 15 of the principal ports of the world totaled 424, or roughly an average of 200 sailings each month to these 15 ports.

As to the efficiency of American crews as compared with those of foreign vessels, well informed maritime men say there is no room for doubt as to the higher efficiency of American crews. It is the consensus of opinion of steamship operators that American crews, like the American worker in industries of this country, are far superior to foreign crews.

With these facts and figures shown, thus verifying what was already a common belief, it is evident there is no reason why there should not be a great American merchant marine provided private industry is given the proper encouragement by sound legislation and the demands of labor do not attempt to destroy the incentive of capital to invest in ships and shipbuilding enterprises.

W. E. Streeter & Sons, ship brokers, New York, recently purchased the tug W. B. SANDERS from the United States shipping board. She is a steel vessel of 900 horsepower.

Elements of U. S. Policy in Return

Ships Were Handled by Navy, Ship- ping Board and Army-- Many New Admiralty Law Points Are Thus Introduced

Various and often successive use of chartered vessels by the United States government, through its different agencies and under different forms of charters renders the understanding of the operation of each vessel a rather intricate and involved problem in respect of the legal rights and obligations of the government, arising out of such operation. To a degree more emphatic than seems to have been understood during the prosecution of the war, the rules of admiralty and maritime law persistently control. A proper understanding, however, of the rights and duties of the United States toward a particular chartered vessel with respect to her charter, her disasters, and her redelivery requires that a proper consideration be given in each particular instance to the possible effect of laws, rules and standards other than the familiar rules of admiralty and maritime law. The conceptions of international law, the provisions of treaties, interallied committees and control, military and naval rules, regulations and orders, federal laws, new standards of care and charges of fault, executive and legislative rules, proclamations and policies, may all have a varying effect upon the decision respecting a particular occurrence.

The operation of vessels for or

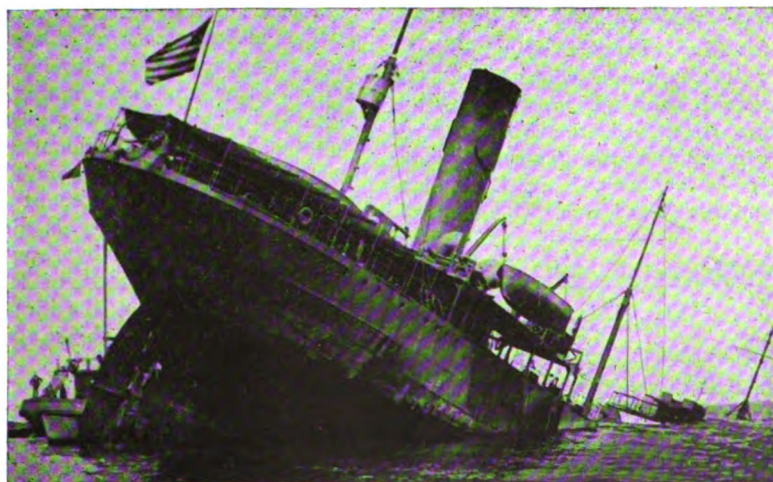
by the United States under time or bare boat form of charters, by the original owners or their agents, or by the army transport service, or the navy, or the shipping board, or the shipping control committee, and the operation of the same vessel in turn as a mine planter, a cargo transport, and a troop transport, with a possible conclusion of service under the charter as a merchant ship, carrying cargoes in foreign trade under the supervision of the shipping board, and all of such operation carried on under the stress of virtually new organizations, in many cases with changing policies, always with a necessary strain for "results," with little time for thought of the day of reckoning; makes the solution of a given problem possible only by those familiar with actual war operations.

The niceties of charter accounting, which usually control in the merchant service, and the exactness which usually controls public officers in the handling of public funds must both, to some degree be foregone. The great maze of obligations outstanding between ship owners and the United States should be disposed of by an intelligent, equitable and speedy program which deals fairly with the owners, and fairly with the tax payer, and with keen appreciation of the opportunities for our merchant marine.

By authority of acts of congress and executive orders of the President of the United States, the shipping board shortly after the declaration of war became the agency of the United States for the acquisition of

all vessels needed for the prosecution of the war. Vessels were quickly requisitioned. In practically all cases, however, within a short time thereafter, the owners and the United States had substituted voluntary charters of one form or another for that requisition. By far the most generally accepted form of charter is the form known as United States Shipping Board Charter Form No. 2. An understanding of the fundamental conceptions of this form of charter is the basis for an understanding of other types and special forms of charters.

Under this charter, at the option of the United States, a vessel may be operated either on a time or a bare boat basis. In many cases, the vessels were first actually operated by the owners for the government upon the time basis, and later when the organization of naval forces became more fully completed, the option was exercised and the vessel was taken over by the United States upon a bare boat basis and operated by a navy crew to army account. Under the time form, the owner provides the crew, bears the marine risks but not war risks, and receives necessarily a greater charter hire. Under the bare boat form, the United States assumes all risks and all duties and the charter hire of the owners covers a fair return upon the investment and the wear and tear on the ship, practically all other burdens being borne by the government. It is with respect to the operation of the vessel under the bare boat form that the bulk of obligations is outstanding.



The government must deliver vessels to their owners free and clear of liens. As it is impossible to sue the government, liens against vessels that have caused disaster while doing war duty are known as sleeping liens. These liens are awakened as soon as the vessel ceases to operate under government charter.

of Requisitioned Merchant Vessels

Under the bare boat form of charter, the owners guarantee seaworthiness of the ship, and that she was when taken over tight, staunch, strong and well and sufficiently equipped. The government agrees to operate the ship, assuming all risks and charges so far as the exigencies of the service will permit to do all things necessary to maintain the vessel's class. The government may alter the ship, erect new fittings for its own purposes, provided that the vessel shall be restored to the owner at the expiration of the war service in the same, or as good order and condition as that in which she was delivered to the government, "ordinary wear and tear" excepted. Under the fundamental obligations of a charterer, the government must return the vessel likewise "free and clear of liens arising out of its own operation."

Under the obligation of the government to redeliver the vessel to the owner, free and clear of liens, arises a most interesting class of outstanding obligations. It is well known that the United States, as a sovereignty, cannot be sued, except with her own consent and property controlled by the United States used for governmental purposes cannot be seized. The rules of admiralty and maritime law, however, are eternal. When two vessels collide at sea, the vessel which is free from fault has a lien upon the vessel which is at fault. This lien arises out of the very circumstances of the collision, and is based upon the conception that ships are personalities.

When a vessel of a foreign flag or

a privately owned and operated vessel of our own flag collides with a vessel operated as a troop or cargo transport of the United States, a lien in favor of the privately owned vessel is immediately laid upon the transport. During the use of the transport for war purposes, that lien is unenforceable. This is because the United States is a sovereignty and cannot be sued without her consent and no such consent has been given. Neither could the transport be libeled for the reason that such a procedure would amount almost to a revolution, in that the property of the United States used for its sovereign purpose would be taken from it. The lien nevertheless is there, though sleeping. At the conclusion of the chartered use by the United States, however, when the vessel is redelivered to owners, immediately the lien is awakened. The former transport is libeled by the owners of the damaged ship. Under the obligation of the United States to return the vessel free and clear of liens, the United States must then immediately step into the proceeding in the admiralty court and defend against the claim and satisfy its charter obligation by saving harmless the owner of the libeled ship.

While the United States cannot be directly sued for the faults of her officers and agents and has given her consent to be sued solely on matters of contract in the court of claims, nevertheless under the peculiar conditions of this charter and the peculiar conceptions of admiralty law, the United States has and will

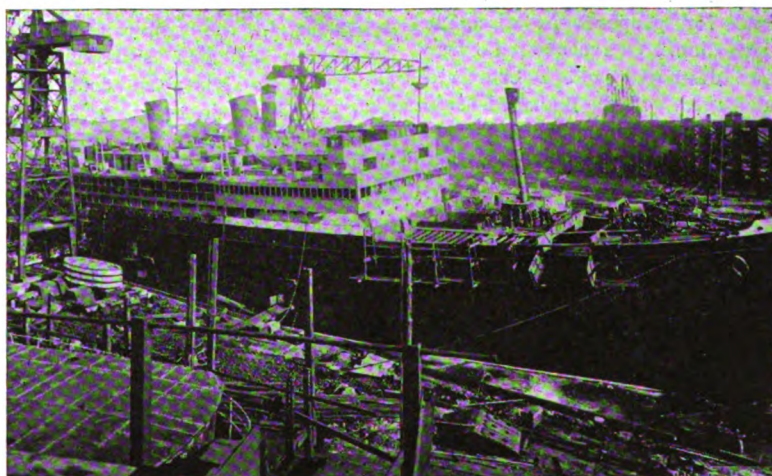
become virtually suable in the admiralty court. It is estimated without any real basis for mathematical calculation that there are outstanding claims in which the United States may possibly be brought into the admiralty court under the procedure outlined, besides the class of cases arising under the LAKE MONROE case, in the amount of approximately \$300,000,000.

We may follow as an example a few days of navigation of a typical vessel, a modern tanker, capacity 10,000 tons deadweight, chartered by the United States to carry oil to France. On Sept. 29, 1918, this vessel was operated in the naval overseas transport service to army account. She had sailed from St. Nazaire, France, on the convoy route bound for New York and was in about the middle of the North Atlantic ocean. At 9 a. m. a suspicious looking craft, which turned out to be German submarine U-152 when later captured and brought to England, was sighted on the port beam of the tanker. The submarine opened fire at a distance of about 6000 yards, outranging the deck guns of the tanker. About the sixth or seventh shot penetrated the upper deck of the tanker, taking a portion of the steering gear and the steel casting on the quadrant, penetrating the deck below and exploding, one portion of the shell entering the magazine and

Questions of Charter Rights, of Liens for Disasters and Their Settlement Analyzed

BY
J. S. STOVER

To fit merchant vessels for war service, extensive alterations were necessary. Now that these vessels are being returned to their owners, they must be reconditioned and, if desired, put back into their original shape. In many cases, however, the owners prefer to secure a lump sum settlement.



setting fire to 180 charges of smokeless powder for the ship's 5-inch gun. This set the after part of the ship afire and everything in the way of woodwork, bedding and seamen's clothing was burned. This running fight continued for some time.

Necessarily, and in accordance with existing convoy orders, the tanker departed from the westbound convoy route to the northward, and five days later was about 200 miles south of Cape Race and about 180 miles off the westbound course. It will be remembered that all ships in these seas were without running or other lights and with windows painted black inside and out. At midnight on that day suddenly on the tanker's starboard bow, forms of three ships were barely discernible. It was at once realized that she was in the midst of an eastbound convoy, all ships at full speed and collision inevitable. Running lights were flashed and from the bridge now was seen what proved to be a United States transport crossing the bow of the tanker. The tanker hit the transport well abaft of amidships and the transport began to sink rapidly. In four minutes she had disappeared. As she sank she stood on end and the break of her fore-castle laid on the tanker's bulwarks, crashing them to the decks. The big ship hung there for a moment. She then shipped off and fell away but rebounded and struck the tanker a sound blow forward of the forerigging on the port side. Only the life belts on the survivors of the transport were left of her. The damage to the tanker was above the water line and she made port with no further trouble.

Disasters of this kind have their various phases and each phase is of interest specifically to some person, agency or government. Lives were lost, men injured, private property destroyed, cargoes needed at the front were sunk and had to be replaced. The conduct of navy officers and men would be inquired into for purposes of discipline or commendation. One chartered cargo vessel was destroyed and a chartered tanker damaged. The damaged ship must be repaired for service and upon redelivery to the owners later, her condition must be accounted for. Commencing with the wireless reports at sea to the navy department, the war department and the British admiralty, a series of reports and investigations must be carried through so that action may be taken by those who are directly interested.

The concern of this article, however, is with respect to the financial rights and obligations of the United States arising out of its interest in the vessels concerned in the occurrence. The

transport was a chartered vessel and immediately under that charter the United States became responsible to her owners for the value of the vessel at the time of sinking. The transport was operated on a bare boat basis and like all troop and cargo transports, she was operated to army account. Therefore, the ultimate responsibility for determining her value was upon the war department. Whether the tanker was fully repaired would be a matter to be determined between the United States and the owners at the time the tanker would be redelivered to the owners at the completion of the chartered use.

If both vessels involved in this occurrence had not been operated by the United States under practically identical charters, it is fair to presume that there would have been a lien either in favor of or against the United States vessel, depending upon the fault for the collision or in case of a division of damages then depending upon the balance to be struck. This is the lien referred to and it would persist against the offending vessel after she had been redelivered to private owners and then enforceable against the ship in the admiralty court.

Because, by the charter the United States has undertaken to clear all such liens, it is a prudent policy for the United States to intervene in the admiralty court immediately when suit is commenced against the ship after redelivery. The United States being obligated to pay the judgment, and having been in command of the crew of the vessel who will be the main witnesses, should as a matter of prudence, protect its interests at all times prior to the judgment.

Sets Radical Precedent

Since it is a sound policy for the United States to intervene voluntarily in this body of law suits, the United States thereby virtually becomes the defendant in the admiralty court. In recognition of this situation, a bill, H. R. 7124—sixty-sixth congress, has been introduced in congress, authorizing suits directly against the United States in the admiralty court *in personam* for any cause of action of which that court ordinarily has cognizance, arising since April 6, 1917, out of the use by the United States of any merchant vessel. While this bill appears to be a radical departure from the precedents, it will immediately be seen that its provisions merely recognize a situation which, already in effect, exists. Indeed, harm has already been done to the United States in these class of cases in that the holder of claims against troop or cargo trans-

ports must necessarily refrain from commencing suit until after the vessel involved has been redelivered by the United States to its private owners. Had these actions been commenced immediately upon the happening of the occurrence, the United States would have been in a more advantageous position to collect its evidence prior to the demobilization of the army and the navy. The passage of this or a similar bill, therefore, would seem a justifiable and prudent measure. With these principles in mind during about a year's view of the operation of these vessels, one is easily convinced that the volume of claims outstanding, many of which will perhaps never be known, even to their holders, is quite large.

If upon redelivery of the vessels by the United States to the owners, the owners receive a lump sum and release the United States from all obligations under the charter, such owners will of necessity not be able to reimburse themselves in the event that claim is made against the vessel under the admiralty rules for a disaster occurring while it was chartered to the United States. This is because the right to make claim for such reimbursement arises out of the charter. If the charter is fully released this right is also thereby released. In view of the fact, however, that the owners had no official representative aboard their vessel when used as a troop or cargo transport, it would naturally be the rule that the owner would have no reasonable basis for knowing whether liens were outstanding on the vessel upon delivery. The United States, however, having operated the vessel should, through its official reports, have complete knowledge of such outstanding liens. The owners take the position that the United States should not require a complete release in this respect and it is the official policy to except such claims from the release which is demanded of owners. Under this policy the owner of the chartered vessel will have no burden to carry other than the duty of notifying the United States when the ship is libeled after redelivery.

In comparison with the redelivery the taking over of the great fleet of merchant ships by the United States was a simple problem. Vessels were taken over by telegram. In some cases surveys were made according to the marine practice and in many cases no surveys were made. The settling of liabilities was left for the day of reckoning. The redelivery of these vessels at this time is the "day of reckoning." It cannot be postponed.

Lake vessels were put into overseas service. Palatial transatlantic liners were crowded with troops whose needs for ventilation, food, sanitation and the like must be supplied by new and rearranged equipment. Coal burners were converted to oil burners. Cargo ships were converted to troopships or to horse transports. Vessels were sunk, raised and restored to condition. All these conversions were made under the pressure of war or under the pressure of the demand of the American people for the immediate return of the American troops after the signing of the armistice.

Uniformly under the charters the United States was given the right of altering ships to suit her service. By the charter also the United States is given the option of returning the vessel to her previous condition or of delivering her to owners without restoration of her physical condition and paying to the owners a fair and reasonable sum which the owners themselves may use in restoring the vessel.

In view of these demands of the American people, that the troops of the American expeditionary forces should be repatriated to the last man, at the soonest possible time, the demobilization of this fleet of troop transports to the number of about 200 vessels must be accomplished not gradually but almost simultaneously. In determining the policy to be pursued in redelivery of these vessels it would seem the better part to redeliver the vessel without physical restoration to her previous condition by the United States and to pay to the owners a just compensation for the damage thus occasioned to the vessel.

Departments Were United

Vessels were chartered by the United States through the shipping board. When used as troop or cargo transports, such vessels were operated to the account of the war department, but manned by the navy. When used as mine layers such vessels were operated to the navy department's account. It will immediately be seen, therefore, that it becomes to unite in organization and in policy necessary for these three departments and to deal as a unit with the owners upon redelivery of the vessels.

By order of the secretary of war, the secretary of the navy, and the shipping board, an organization has been effected with headquarters at New York, for determining all matters concerning the redelivery of troop and cargo transports. Joint boards of survey, each board consisting of

one army officer, one navy officer, and one shipping board representative, with ship surveyors and other technical experts attached, are located at New York, Philadelphia and Newport News, Va. These boards of survey after making their surveys and investigations, and after receiving the claim of and conferring with the owners, forward their findings to the joint board of review, of which Brig. General Moses of the army is chairman, and Captain Bostwick of the navy and Mr. Lytle of the shipping board are the other members. The joint board of review has as its coun-

and when the vessel has been cleaned, surveyed, and inventoried a five days' notice is served upon the owners and at the time set in such notice the owners take custody of the vessel. Simultaneously with these proceedings the owners and the joint boards of survey or joint board of review are engaged in coming to an amicable adjustment of the obligations of the parties.

Though the ascertainment of the fair and equitable sum to be paid to the owners is not an easy but is a difficult problem yet the wiser policy prevails to make a speedy adjustment so that the vessel may be restored to the trade and the United States may afford to the owners the use of the proper funds for the reconditioning of the vessel promptly.

Problems in Redelivery

In redelivery, many interesting problems arise. One such is with respect to compensation for damage done to a vessel by cutting of air ports for the purpose of providing ventilation for troops. These air ports were ordinarily 14 inches in diameter. Claim is made by some owners for an entire new plate at a cost of approximately \$2000 per plate. The position of the United States has been that if the air port is sealed by a welded spigot patch at a cost of from 5 to 10 per cent, the vessel is as tight, staunch and strong as when delivered to the United States. The burden of this stand is upon the welding industry, the same industry which welded the cylinders of German vessels damaged by their crews. This same problem has arisen in England and the British government has similarly determined. The classification societies have seemed willing to pass a welded patch. Argument is made by the owner that with a patch the vessel is not as saleable as with a new plate. The government meets this objection with the familiar decision of the admiralty court that the mere timidity of a buyer is not of sufficient certainty to be an element of damage. The decision upon this problem means a difference of approximately \$25,000,000. Whether this rule will persist and prevail would seem to depend upon whether the seemingly conclusive arguments of the government can be answered.

Another proposition of interest is involved in the duty of the United States to redeliver the vessel in as same or good condition, "ordinary wear and tear" excepted. The position of the government is that the "ordinary wear and tear" referred to is

(Concluded on Page 524)

Held Important Post

JOHN S. STOVER, the writer of this article, was from Nov. 1, 1918, to Sept. 1, 1919, the organizer and head of the office of the judge advocate, maritime affairs at New York on the staff of the commanding general of the port of embarkation, Hoboken, N. J., with the rank of Lieutenant Colonel. That office, now provided as a permanent organization, is admiralty counsel for the war department at New York. All disasters occurring to vessels arriving at that port were immediately reported to that office for investigation, settlement or the preservation of evidence. Mr. Stover was also counsel to the various organizations passing upon the redelivery of vessels. The office at the conclusion of his service consisted of about 30 lawyers besides technical experts.

Mr. Stover received his admiralty training on the Great Lakes. He has returned to the practice of law to his firm, Stover & Stover, Milwaukee.

sel the office of judge advocate, maritime affairs, of New York, which is also admiralty counsel for the war department at New York. The finding when approved by the joint board of review is then forwarded to Brig. Gen. Frank T. Hines, chief of transportation service, for his action and the action of the secretary of war. It is estimated that these awards will be approximately \$200,000,000.

By the third paragraph of the requisition charter, the United States may redeliver a chartered vessel to the owners at a port of the United States upon five days notice, but this redelivery is "without prejudice to the accrued rights of either party." When the need of the United States for a troop or cargo transport is concluded

Memorandum. It is also agreed, that bar, bundle, rod, hoop and sheet iron, wire of all kinds, tin plates, steel, madder, sumac, brooms, wickerware and willow (manufactured or otherwise), straw goods, salt, grain of all kinds, rice, tobacco, indian corn, fruits (whether preserved or otherwise), seeds, fish, hay, vegetable, sugar, hemp, iron, brass, cotton, wool, and any other articles used for bags or bagging, plates or crapes, household furniture, skins and hides, musical instruments, looking glasses, and all the articles that are perishable in their own nature are warranted by the Company free from average, unless general average, unless general average, except in boxes for iron or saws, under *seven per cent.*, unless general; and for arax, wax, seed and bark, are warranted by the Company free from average under *seven per cent.*, unless general; and coffee, in bags or bulk, pepper, in bags or bulk, free from average under *ten per cent.*, unless general. Profits warranted free from claim for general average, but subject to the same per centum of partial loss as if the insurance were on goods. In case a total loss of profits be claimed, the underwriter is to be entitled to a credit of the same per centum of salvage as if the insurance were on goods, and in case of contribution in General Average for any portion of the goods at the customary sound value, this Company is to be free from claim for loss on such portion. Not liable for loss arising from wet, breakage, leakage or exposure of goods shipped on deck.

Marine Insurance Field

It is further warranted by the assured that this insurance shall not inure directly or indirectly to the benefit of the carrier or other bailee, by stipulation, bill of lading or otherwise, nor by any breach of the contract of carriage or any act or agreement by the assured, prior or subsequent hereto, whereby any carrier or party liable therefor may be released or exonerated on account of the loss or damage to any property insured hereunder, given the benefit of any insurance effected thereon, shall render the policy of insurance void and the loss or damage shall be payable to the carrier or other bailee.

In case of any agreement by the assured prior or subsequent hereto, which gives any right of recovery of the assured for loss of or damage to any property insured hereunder, against any person or corporation, is released, impaired or lost, which would on acceptance of abandonment or payment of a loss by this Company, have enured to its benefit, but for such agreement or act, this Company shall not be bound to pay any loss, but its rights to retain or recover the premium shall not be affected.

Warranted by the assured, that the assignment of this policy or of any insurable interest therein, as also that the subrogation of any right

a wager, in which both parties to the contract were expected to conduct themselves in a sportsmanlike manner. It was, therefore, early established that the assured was bound to disclose to the underwriter every fact regarding the risk which the latter

Involves Romance

THE past history of marine insurance is full of romance as it forms an integral part of the earliest records of commercial transactions. Man's natural prompting to take risks in investing capital to advantage was instrumental in promoting the growth of this spectacular form of investment. An interesting fact connected with this business is that the older forms of contracts are still in use, due to the fact that their wording has been recognized in innumerable courts of law. For this reason, the author points out that it would take many centuries to have courts decide just what would be meant by every word of a new form of contract. Mr. Lowerree, on account of his many years of association with marine insurance companies, was asked to prepare this article especially for

THE MARINE REVIEW.

should know that would influence the rate of premium or acceptance of the risk and any failure to do so would make the contract null and void.

The early underwriters were not great corporations like those of today with assets running into seven or eight figures but rather individuals of sporting tendencies who were at a considerable disadvantage because of the fact that they were most likely unfamiliar with the vessel, or the risks to which it was likely to be

In the year 1601, the English parliament appointed a commission to decide disputes under contracts of marine insurance, but as the business, as then conducted, was solely by private persons acting independently, there was a considerable gamble in covering marine risks which made the contract at times of doubtful value to the assured. Often, due to keen competition, the assurers were lead to assume liabilities and an amount at risk far in excess of their financial resources. In the course of time the business reached a considerable volume and led those who made it their business to accept marine risks to meet at fixed hours so that ship-owners and merchants could negotiate with them the rate of premium and terms of the contract for any particular voyage.

In the old days, in London, the so-called coffee houses were the principal meeting places of shipowners, merchants and mariners. It was at these coffee houses that the underwriters also assembled and evolved rules of practice and adopted the means of ascertaining with some degree of accuracy the rate of premium to govern in given cases. But for generations to come, they continued to insure severally without combining responsibility. One of the most popular coffee houses of that day was owned by Edward Lloyd, a shrewd business man with unusual foresight, who in 1696 started the publication of a weekly shipping paper called *Lloyd's News*, which was the forerunner of *Lloyd's List*, started in 1726 and still published.

Some time in the obscurity of the

seventeenth century the familiar form of Lloyd's policy was evolved and it is in common use in England today. It is a form of contract which is the very essence of simplicity and clearly shows that the early methods of the English underwriters was not continually to change their form of policy to meet various contingencies but to adopt a standard form and stand by it, protecting themselves against adverse decisions by increasing the premium rather than changing the policy form.

Lord Mansfield, who presided in the court of king's bench from 1756 to 1778, probably did more than any other one man to establish the law of marine insurance in its present form. His decisions appear to have been based uniformly on existing customs. This judge was in the habit of submitting questions of marine insurance to special juries of merchants who appear to have been singularly free from prejudice. The ground won during this period is still firmly held today and the principles of fair dealing on which the business was originally based still hold good. There are extremely few cases litigated and in the opinion of a well known authority, "there is no business of equal proportions in which there are so few cases carried to the courts for decisions."

To the marine underwriter, the old Lloyd's form has a dominant bearing for the reason that in using this original form he knows he is on firm ground no matter how many changes may be necessary to meet the actual conditions at hand. Practically every word in the original form has had its legal interpretation and its meaning has been settled for more than a hundred years. The underwriter, therefore, feels that he knows exactly what it means and once he departs from this form he is on new and unfamiliar ground. If the old form, which to some extent appears antiquated, were discarded and rewritten it would take centuries to have the courts decide just exactly what was meant by each word. Consequently the old form is still used with modifications in the shape of paragraphs or clauses attached to cover prevailing conditions. The underwriter knows that "perils of the sea" include certain risks and exclude others, for example, the bursting of a donkey boiler or the negligent handling of cargo are not included in the cover.

The name "Lloyd's" has become synonymous throughout the commercial world with the business of marine insurance. In England the name Lloyd's remains associated with

groups of individual underwriters who today handle a tremendous volume of business, not only marine, for they now write every class of insurance, known to business all over the world. This name has been adopted in the United States by associations of private and individual underwriters, as distinguished from insurance corporations whether of marine or any other class of insurance.

It will perhaps be a surprise to some to know that the name "Lloyd's" has nothing to do with maritime matters, strictly speaking, but we have got into the habit of thinking so from the fact that so many concerns connected with the sea, such as steamship companies, vessel registers, marine insurance companies, etc., use the word "Lloyd's". It has all come from the original Lloyd's coffee house in London.

The Start in America

The underwriting of marine insurance started in the United States in 1721, but with indifferent success until 1794 when the Insurance Co. of North America was organized in Philadelphia. This is the oldest American insurance company in existence at the present time.

During the Napoleonic era, England possessed an immense merchant marine and the premium income of British underwriters was sufficient to withstand the severe losses inflicted by French and Spanish privateers. The merchant marine of America, at that time, although much smaller in size than the British, was nevertheless in excess of the needs of this country for its trade, with the result that American shipowners sought the more hazardous trades where fortunes were quickly made if one were lucky enough to avoid capture at the hands of the belligerents. This was the cause of a great slump in the business of American marine insurance companies because claims reached such proportions that the underwriters were obliged, in self defense, to extend their list of warranties until all risks of war were excluded. As there was little business of a peaceful nature to offset the war losses, the leading American underwriters devoted their energies in the development of their fire business at the expense of the marine department.

Following the abolition of the navigation acts of England in the forties the fine fleet of American clipper ships began to seek charters for voyages to British ports and marine insurance was actively revived but for some reason the profits realized

were far below expectations. The only companies able to stand the heavy loss ratio were those who derived a large income from other sources than premiums on marine risks. The records of the Insurance Co. of North America show some interesting data. For instance, during the first 10 years of foreign wars they received \$6,000,000 in premiums but were left with only 9 per cent to cover expenses while during the 20 years from 1842 to 1862 the premiums received were just under \$6,000,000 but after the losses were deducted there was left but 15 per cent to cover expenses.

With the introduction of "iron pots" as the first British iron steamships were called, American marine insurance went into serious decline. British insurance companies insured cargoes in their iron ships at a rate of $\frac{1}{2}$ to $\frac{3}{4}$ of 1 per cent less than the rate demanded for cargoes in the wooden vessels of American registry. This resulted in the American underwriters cutting the London rate on cargoes carried by wooden ships with disastrous results to themselves. This has been the result of every case of rate cutting where an attempt has been made to secure marine insurance business by cutting the rate to attract the customer, instead of basing it on scientific calculation and the laws of average which are bound to prevail. Few marine insurance companies are wrecked by large single disasters like that of the TITANIC, but by the multitude of small accidents to which the daily newspapers give but a few lines at the most. Yet these prosaic reports amount to millions in the aggregate.

Marine underwriting in American companies was a negligible quantity when the Civil war broke out and following it during the reconstruction period of intensive development of the countries resources. Capital was borrowed from Europe and it was natural under these circumstances that the foreign capitalists should prefer to carry insurance in their own institutions and the result was that American marine insurance business was confined largely to coastwise and inland trade while the bulk of our exports were insured in foreign companies with agencies in America. The ships themselves being largely of foreign register were all covered in foreign companies.

It is apparent that one of the unfortunate mistakes in the early history of the American market was the failure to provide reinsurance facilities which has necessitated a large bulk of this business being placed with foreign institutions. It is estimated that at the outbreak of the

world war nearly 85 per cent of the marine insurance placed in New York, which is the center of the American market, found its way either directly or by reinsurance into the hands of the foreign market. This virtual monopoly of the American market by foreign interests was to some extent resisted. A few years ago, American companies succeeded in winning all the Great Lakes' business away from the London market but, as usual, this was accomplished by the rate-cutting process and it is understood that the business was written at less than cost in most cases.

The neutral stand taken by the United States when the war broke out in Europe brought in an immense amount of business with European ports, which were conveniently located for transshipment of cargoes, as it was well known that the ultimate destination of much of these goods was the central powers. Insurance on these cargoes could not be obtained in London, due to the restrictions imposed by the trading-with-the-enemy act and it became necessary to obtain the cover elsewhere.

This led to a general call for increased facilities to handle the largest volume of marine insurance that had ever been the good fortune of American underwriters to obtain. The country was scoured for insurance companies with marine charters, new companies were organized and many of the first insurance companies opened up a marine department. The so-called war risk was the inducement which brought several companies into the field because of the high rates obtainable. The rate on sailing vessels reached 25 per cent and cargoes in steamers to Mediterranean ports were as high as 20 per cent. Then the government entered the insurance game and tended to stabilize the rates for the war cover but the government's red tape and technical ways of handling the business were not satisfactory to the assured who would usually prefer to insure with corporations even though the premium charged in the average case was somewhat higher.

The war risk was purely a gamble and several of the old line companies declined to write it, except at prohibited rates, especially when the ravages of the German submarines were at their worst. It is interesting to note that results of this great increase in business were disappointing to some companies and highly encouraging to others. One of the fire companies which made a strong bid for the war risk feature by shading the rates received \$9,000,000 in premiums during 1918, which was

more than double its income from its fire business.

This experience has materially broadened the American market facilities to the extent of practically reversing the percentages of the American business handled in this country and abroad. Recent estimates show that about 65 per cent of America's export business is insured in American companies with less than 35 per cent going into foreign hands. Before the war there were only 25 marine insurance companies with offices in New York and less than one dozen of these were American. At the present time, there are 76 of which 25 are foreign. What is more important, the business of marine insurance has lost much of its mystery and is no longer a sealed book to American insurance underwriters, with the result that there is every prospect that the business which has come to American companies as a result of the war will be retained. It is obvious that the business of marine insurance, like many other lines of trade, has moved from the great center of London to the westward.

Reinsurance facilities on a broad scale are a vital necessity to handling a large volume of marine insurance. Even the largest companies rarely carry more than \$20,000 net on any one vessel and it would have to be an A-1 ship at that. Yet one company will issue policies of \$100,000 or more and in some cases a single company will write a policy for \$1,000,000 which demonstrates the need for adequate reinsurance facilities. There is the possibility that some newcomers in the field may be overconfident in their assumption of risks as expert underwriters are not made overnight but are developed from years of experience and the supply of this talent is rather limited. It must be remembered that a total loss on a good-sized risk is preferable to a large number of small losses which means heavy expenses in adjusting.

Prior to the war, German companies obtained a large amount of reinsurance from which they reaped a large profit for themselves, but the bulk of this business was controlled in London. American capital is easily obtained for investment in American institutions wherever there is a reasonable opportunity for obtaining a fair return on the investment. All indications point to New York as being the commercial center of the world and if this nation is to possess a large merchant marine it will be backed by the necessary insurance facilities.

Curtails Speculation

The freight broker of the speculative type, who carried his office about the San Francisco waterfront under his hat, has been eliminated as a factor in the shipping business, says the *Journal of Commerce*. The result is that it is now impossible to secure an option on 1000 tons of space, more or less, on any vessel scheduled to sail in the future. The only claim recognized by the operators and managers is a contract for the space, and if the vessel sails with "dead" space the shipper or concern responsible for the contract is obliged to pay. A new form of contract has been arranged, and now when one of the shippers wishes to secure space he is obliged to sign the contract, which includes numerous restrictions. Many of these scalpers made a small mint of money during the war.

U. S. Ship Return Policy

(Concluded from Page 521)

the ordinary wear and tear incident to the war use of the vessel as contemplated by the charter and in view of all the world conditions at the time of execution of the charter.

The provisions of the charter providing for arbitration of differences have been held to be without authority of law and the awards can be made only by action of an executive department of the United States, or by the court of claims.

At the time of redelivery the joint board of review has before it as complete a history of the use of the vessel as it can obtain. Reference is made to collisions, repairs, alterations, previous trade, inspections. Before the crew which operated the vessel is discharged from service the judge advocate, maritime affairs, takes their complete evidence as to all matters possibly affecting the ship. These matters when compiled are referred to the war department and become a part of the permanent files. An examination of these files at some later time would unravel many interesting and lurid tales of the seas.

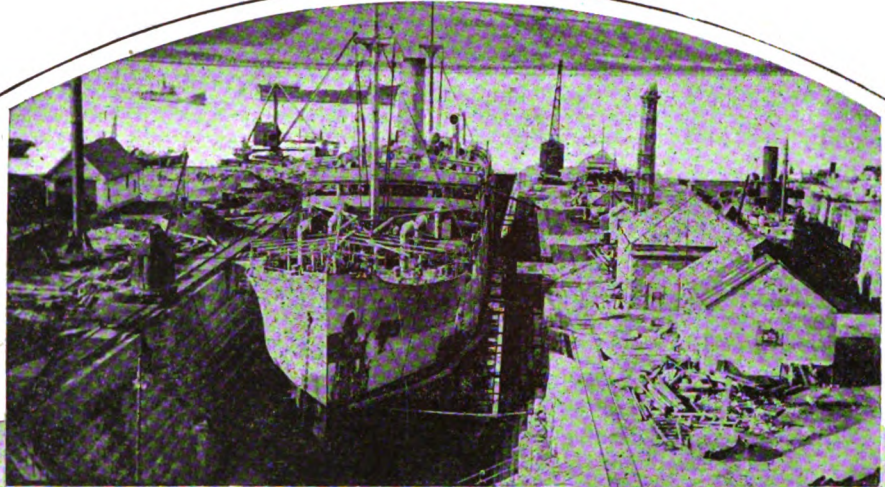
Free ports are to be established at the three leading Swedish ports, Gothenburg on the West coast, Malmo on the South coast and Stockholm, the capital and largest city.

According to present plans, the three ports when work is completed will have the following lengths of quays: Stockholm, 11,400 feet; Gothenburg, 16,300 feet, and Malmo 20,000 feet. The depths of water at mean low tide will be: Stockholm, 33 feet; Gothenburg and Malmo, 30 feet.

Refitting War-Torn British Fleet Taxes Capacity of Shipyards

Vessels Are Entering
Peace Trades After
Five Year's War Work

BY CUTHBERT MAUGHAN
Shipping Editor, The London Times



Harbor at Falmouth, England, and the captured German steamer HAMM in drydock

DURING the war, ship repair work in Great Britain was greatly developed, especially when submarine warfare was at its height. It was realized in such an emergency that to repair a ship in two or three months was better than to build a ship, requiring many more months. The urgent need of expediting and organizing ship repair work was appreciated, especially early in 1917, when Sir Eric Geddes, who afterwards became first lord of the admiralty, was appointed controller of the navy. This department was established at a time when the shipbuilding output of the United Kingdom was declining and ruthless submarine warfare was being intensified. Many ports were congested with damaged ships, and there was neither labor nor material to repair them. There were also many ships which had been attacked by submarines strewn on the coasts of England and Ireland. Two men well known in ship repair work in the

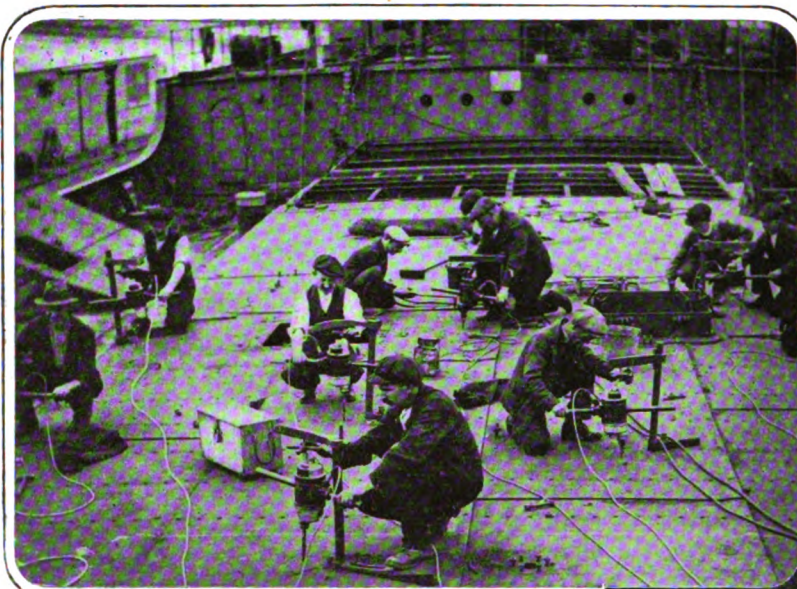
United Kingdom were appointed to manage the new department. One was Col. H. M. Grayson, M. P., managing director, Messrs. H. & C. Grayson Ltd., of Liverpool and London, who took charge of all repair work in British, French and Italian ports. The other was G. F. S. Edwards, a director of Smith's Dock Co., Ltd., of the northeast coast of England, who was concerned with repairing in ports of the United Kingdom. Both men were nominated as representatives of the ship repairing industry.

Colonel Grayson and Mr. Edwards at once appointed well known ship repairers in each of the large ports of Great Britain to act as superintendents. These were made responsible, under directors of the department, for the allocation of drydocks and the distribution of repair work. In the department at the admiralty complete records were kept of the movements of ships in and out of drydocks, so that when word was re-

ceived of damage to ships it was possible to know at once which port could deal with them most quickly and efficiently.

At the time of the establishment of this department, there were 42 ships, representing 250,000 tons, lying wrecked on the coasts of Great Britain. Arrangements were made with the salvage section of the admiralty and private salvage organizations to work on the ships. Most of them were soon floated and sent under escort to the repair centers.

The extent of the work is indicated in an official announcement that from July, 1917, to the end of February, 1919, there were repaired 15,000 ships, representing 55,000,000 gross tons, equivalent to about 90,000,000 tons deadweight. In 1918, 8539 vessels, representing 27,249,000 gross tons, or 45,500,000 tons deadweight, were repaired. Heavy repairs requiring more than one month were made on 850 ships of 2,937,000 gross tons,

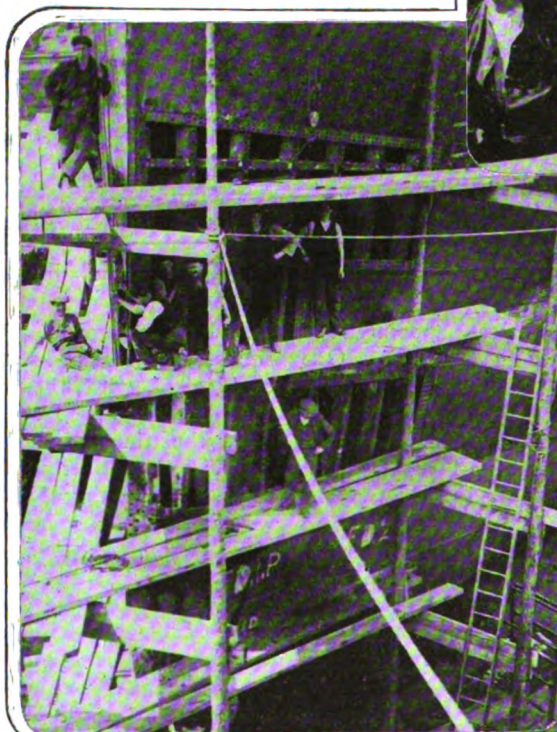


Large Standard Oil ship being converted into ordinary cargo carrier at Falmouth

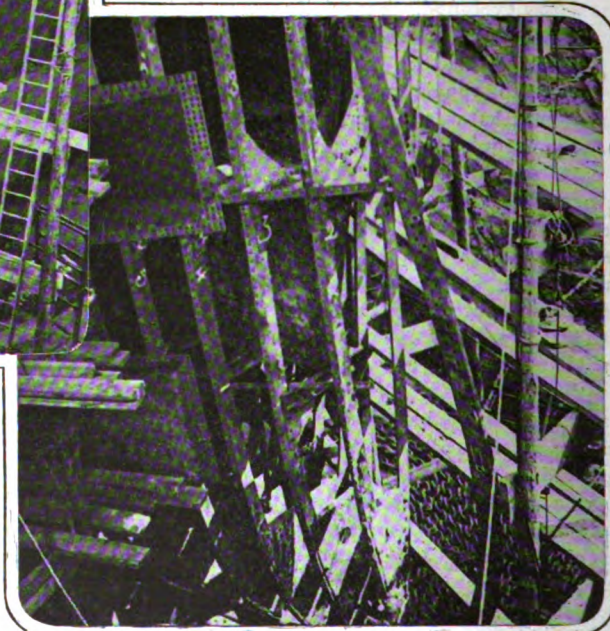
Electric welding stern frame of British liner. Much progress has been made in the use of electric welding by British shipbuilders and repairers



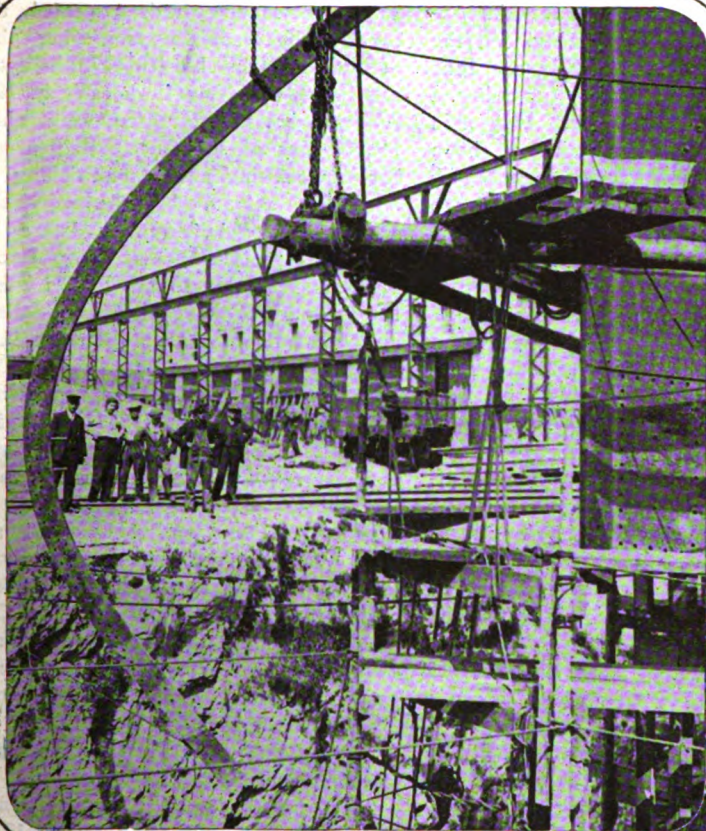
The bow of this steamer being repaired was damaged during the war



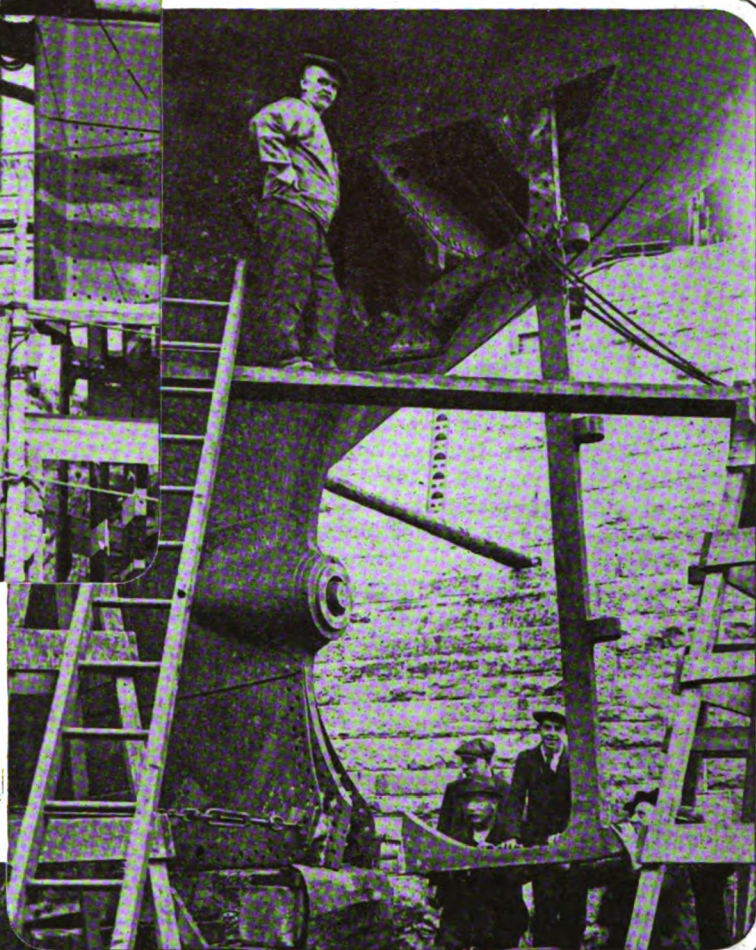
Demand on British ship repair yards was so heavy that many steamers damaged by submarines during the war are just now finding berthing space



Ship repair work at Falmouth. At the left, fitting new stem to British steamer. New workshops in course of erection are shown in the background



Connecting stern frame before welding. Many British steamers are undergoing similar repairs after severe usage during the war



British India liner Nirvana undergoing repairs in dry-dock at Falmouth

or 4,895,000 tons deadweight. In 1918 at least 500,000 gross tons of French shipping was repaired in the United Kingdom and returned to France.

These figures take no account of repairs to warships made in private yards. It was stated at a meeting of the North East Coast Institution of Engineers and Shipbuilders last summer that on the north east coast alone 7956 war vessels and merchantmen were drydocked and repaired, while over 20,000 ships were repaired afloat. Women shared in the work and some of the largest battleships were painted and coated by the women on the admiralty's floating dock at Jarrow. Women even cheerfully chipped and scaled the interior of the marine boilers. The Tyne became the natural refuge for the larger class of damaged warships.

In a written reply to a question in parliament as to how many commercial vessels there were in dock or harbor refitting after the war for commercial employment, Colonel Wilson, parliamentary secretary to the ministry of shipping, stated that in April there were 201 vessels of between 1000 and 5000 tons refitting under the supervision of the controller general of merchant shipbuilding, 26 vessels of between 5000 and 10,000 tons, and three of more than 10,000 tons. It was anticipated that the majority of these steamers would be available within three months. In addition, there were eight armed merchant cruisers of from 5000 to 10,000 tons and 14 of over 10,000 tons. It was hoped that the work would be completed before winter. The statement did not include vessels refitting for owners privately, for which figures were not available.

Early this year a letter was addressed by Lord Pirrie, controller general of merchant shipbuilding, to all British shipowners intimating that it was possible to release control of drydocks, dating from May 31. Shipowners were to be free to make their own arrangements, power being reserved, however, to order priority for government requirements when necessary. The controller general then expressed his personal thanks for the way in which the ship repairing firms had carried out difficult tasks during the war, and he expressed his appreciation of the successful way in which they had at all times met the needs of the situation. He hoped that, with the release of control, they would have opportunities of carrying out their work in a way which would bring them success.

Detailed records of the available shipping were kept by the authori-

ties during the war. Those under the heading of "Shipping Not in Action" are specially interesting. At the end of 1916, about 300,000 gross tons of shipping was inactive, including a substantial amount which was laid down before the war, but had been left in incomplete stages. By April, 1918, this figure was increased to 1,500,000 gross tons, this large quantity reflecting the damage done by submarines. Throughout 1918 the tonnage remained at about this figure, but by January, 1919, it was raised to 1,700,000 gross tons, and by February, to 1,900,000 gross tons. The present figure is 1,400,000 tons. The figures for 1919 reflect the work of refitting and reconditioning vessels after their war service, and also the increase in launchings. These figures compare with less than 16,500,000 gross tons of shipping of 100 tons or more at present belonging to the United Kingdom. The gross tonnage may be calculated usually as representing about 60 per cent of the deadweight tonnage.

It is notable that the United States shipping board always calculated its shipping in deadweight tonnage, whereas, in official statistics in Great Britain the denomination used is gross tonnage. Throughout the war there seemed strong justification for the American adoption of the deadweight tonnage term, since the United States was mainly concerned with increasing its cargo carrying capacity. Since gross tonnage represents the internal cubic capacity of the whole vessel, calculated on the basis of 100 cubic feet per ton, plus the tonnage of certain deck houses and erections and minus certain reductions, it is thought in the United Kingdom that gross tonnage is more suitable for describing the size of vessels of the liner class. The north Atlantic liners, for instance, while having a large gross tonnage would have a comparatively small deadweight capacity.

Among the first of the vessels to be refitted after their war service were those which were employed as mercantile cruisers. Ships employed as transports have been kept busy in the repatriation of troops. Demands on shipping space have been so heavy that thousands of passengers have been unable to travel. At the beginning of September over 14,000 persons wished to return from the United Kingdom to South Africa, and more than that number were waiting to proceed to India.

All the yards were busy at that time. The OLYMPIC, of nearly 47,000 gross tons, proceeded to Belfast on Aug. 11 to be reconditioned by her builders,

Harland & Wolff, Belfast, after her war service, and it is expected that she will be ready to resume her place in the service between Southampton, Cherbourg and New York early in 1920. A few weeks ago there were about 100,000 tons of shipping in Belfast harbor for refitting and reconditioning after their release by the admiralty. The vessels included four liners belonging to the Royal Mail Steam Packet Co., one belonging to the Pacific Steam Navigation Co., one Union Castle liner, an Orient liner, and an Ellerman liner. The Royal Mail Steam Packet Co.'s liner ORBITA, of 15,000 gross tons, which was placed in the hands of Harland & Wolff in March, has been reconditioned and she sailed for Southampton late in September. During the interval of six months she was entirely refitted and once more is a passenger liner of the highest type. In the middle of September, the Royal Mail Steam Packet Co.'s steamers, ANDES, 15,620 gross tons, and AVON, 11,073 gross tons, left Southampton for South America in the regular mail service. These vessels, during the period of hostilities, did duty as armed mercantile cruisers.

At about the same time, the Union Castle liner ARMADALE CASTLE, 12,793 gross tons, was returned to the South African route after having been reconditioned. The GRANTULLY CASTLE, 7612 tons, has also been returned to service. The KINFARNS CASTLE, 9664 gross tons, was reconditioned in September. The KILDONAN CASTLE, 9692 gross tons, is still being used as a troop ship and the DUNLUCE CASTLE, 8124 gross tons, had not yet been released from duty as a hospital ship. Incidentally it is of interest to note that the ARUNDEL CASTLE, of more than 18,999 gross tons, was launched at Belfast on Sept. 11. This vessel is the largest that has yet been built for the South African trade.

Two large Peninsular & Oriental Steam Navigation Co. mail liners, which were commissioned as armed mercantile cruisers during the war, although released from government service, had not by the middle of September been returned to normal service. Two other large liners were still employed as transports at that time and consequently mail service was being maintained temporarily by vessels of the intermediate class, capable of carrying 70 first-class passengers.

Return of the regular liners has been eagerly awaited in view of the large demand for passenger accommodations. Contracts have been placed for many large liners for Australian and eastern trade. This article was brought to the United States by the MAURETANIA, which on Sept. 20 made her first voyage from Southampton to New York



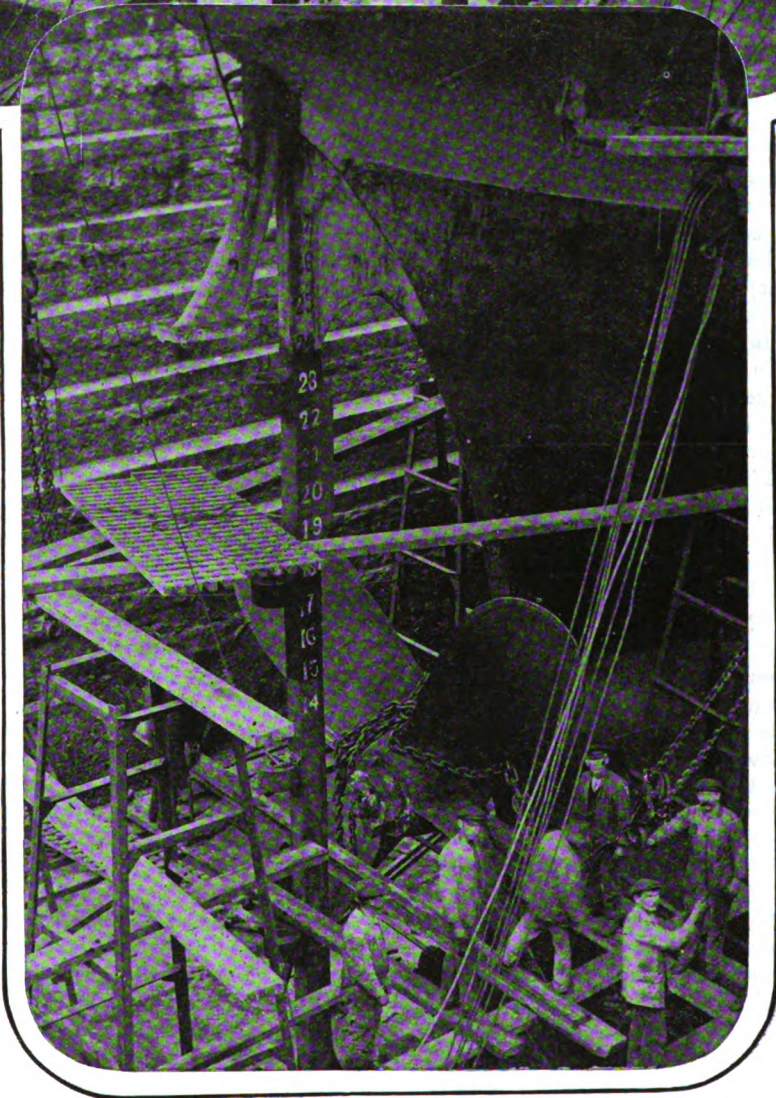
after having been laid up some weeks for refitting and reconditioning. Her engines have also been overhauled.

Apart from the actual losses of tonnage which were quite serious, there can be no doubt that much damage has been caused to liners by the strain imposed on them through long war service. When large liners were employed as mercantile cruisers, or as transports, they were strained to the utmost extent. Damage has come to notice when vessels have gone into drydock. They have been placed in drydock for a thorough overhauling, and then it has been found that in consequence of the mining or torpedoing of the ships the decks were buckled, or other injuries inflicted.

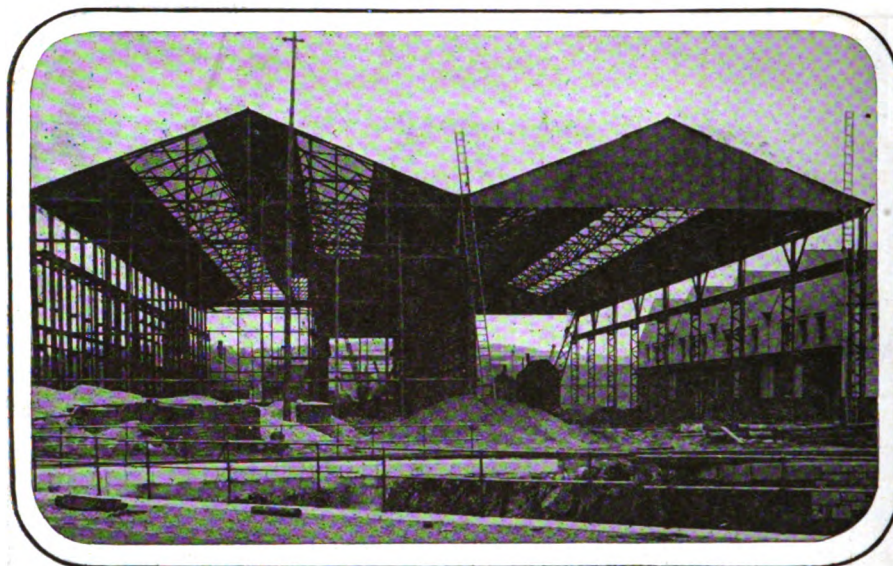
Question of Liability Arises

Questions of liability as between the government and owners have arisen. There can be little doubt that in many cases owners will not receive full compensation from the government for the shortening of the ships' lives. The extent of the damage is often hard to apportion.

One of the ports for ship repairing which became of increased importance during the war was Falmouth on the southern coast of England. This port has particular interest for the United States since it is the first port on the southern coast of England at which vessels crossing from North America



FALMOUTH HARBOR, NOW ONE OF THE LEADING SHIPYARD PORTS OF ENGLAND, HAS SPLENDID ANCHORAGE FACILITIES. BELOW IS SHOWN THE STERN OF A GERMAN LINER SEIZED AT CAPETOWN. RUDDER AND PROPELLER ARE BEING OVERHAULED



NEW SHOPS UNDER CONSTRUCTION AT FALMOUTH, ADJOINING DRYDOCKS

or coming up from the South can touch. It is a short distance from the Lizard, which is often the first land sighted. It has been visited by many American steamers this year. On one day the writer counted nine American steamers, bound mostly from the United States for Germany or Holland with food-stuffs. Among the ships were recognized vessels built on the Great Lakes, and others built by Skinner & Eddy, at Seattle, and by the Submarine Boat Corp., Newark, N. J. It was into this port that the lake-built steamer, LAKE CHARLOTTEVILLE, built by the Toledo Shipbuilding Co., and owned by H. Randall & Co., Boston, brought the remains of Hawker's airplane, which the captain had salvaged in the Atlantic. This steamer arrived on May 28, bound from Montreal to Danzig with 3500 tons of flour and 500 tons of coal. While at Falmouth the vessel was directed by the United States authorities to proceed to Reval. Many steamers make for Falmouth to receive their orders.

A fair volume of oversea trade was carried on at Falmouth, on the Cornish coast, before the war, and its resumption will now be assisted by the re-establishment of the coasting services. Close to the port are large quarries of china clay, which is shipped from the neighboring port of Fowey and also from Falmouth to all parts of the world. There is a regular trade in china clay with the United States.

On the outbreak of war a large number of steamers took shelter at Falmouth, and with the development of submarine warfare the importance of the port increased. At one time a great number of vessels were torpedoed off the Scilly Isles and the Cornish coast, but gradually the British and the American navies got the upper hand of the submarine danger in the ex-

ternely important neighboring waters. Falmouth became a mine-sweeping center, a base for the escort of convoys, a port for the repair of vessels damaged by mines and torpedoes and a haven for the examination of shipping by the naval authorities as part of the blockade system. More than 800 vessels proceeded from Falmouth for long voyages in convoys, and more than 2000 sailing ships were escorted from Falmouth to France with coal and other essential commodities. Many wonderful tales are told at Falmouth of the measures taken to deal with the submarine menace. Twenty-nine ships which had been torpedoed were brought into Falmouth and repaired there.

Probably not until the spring of 1917, when the submarine danger was greatest, did the authorities realize the great possibility of Falmouth as a repair base. The admiralty departments concerned, including that of the director of ship repairs in the United Kingdom did their utmost to modernize the port. At first it was thought that the best arrangement would be for the admiralty to purchase the capital of the Falmouth Docks Co., but the directors realized the advantage of securing the support of a large shipping combination, to avoid the risk of destroying interest in developments after the war. This view was appreciated by the director of ship repairs.

Consequently, Allan Hughes, chairman of the Federal Steam Navigation Co., which trades largely with Australia, was interested in the project and arrangements were made for the Federal company to take over the Falmouth Docks Co., and also the engineering business of Cox & Co., Ltd., who have works there. It may be noted that Mr. Hughes is closely associated with Lord Inchcape in a number of shipping in-

terests. Mr. Hughes became chairman of the Falmouth Docks Co., and arranged with R. and H. Green and Silley Weir, of London, one of the oldest shipbuilding and shiprepairing firms in the country, to manage the shipbuilding and shiprepairing portion of the business of Cox & Co. Men who had gained great distinctions in repair work at the Royal Albert docks and those of A. O. Blackwall, London, were immediately dispatched to Falmouth, and they at once set to work to accelerate the deepening of the existing docks, work which had been started by the admiralty in collaboration with Messrs. Green and Weir. The result is that during the past few months vessels have been repaired at the port which could not have entered there before. These ships have included vessels of some 9000 gross tons, or 15,000 deadweight tons.

Lately one of the largest Australian liners outward bound from Liverpool with a thousand troops, put in to Falmouth with serious engine trouble. The necessary parts were cast, machined and fitted, and the ship was enabled to leave within 48 hours. Immediately afterward a large ship which had been used as an oil tank vessel during the war was converted into an ordinary cargo steamer.

For some months past work has been proceeding on the construction of a large new drydock to accommodate vessels of a length of 720 feet, a beam of 90 feet and a draft of 28 feet. It is hoped that the task will be completed next year. Upward of 100,000 cubic yards of excavation, mostly in rock, are being made for this dock, and a large proportion of the debris will be used for reclaiming land. The new dock is close to the existing drydocks and water space on either side of the wall is being reclaimed for shops, railways and equipment. It may be noted that one of the existing drydocks has accommodated ships up to a length of 475 feet, drawing 18 feet of water. A large gantry is being completed at the new dock which will be surmounted with 60-foot derrick cranes and 100-foot jibs, capable of lifting six tons, and it will be fitted with two sets of tracks for traveling cranes.

The constructors are fortunate in having large supplies of granite for the new dock close at hand on the Cornish coast. In connection with the quarries a large blockyard has been built at the adjoining town of Penryn, with cranes, concrete mixers, gantries and railways. Blocks each weighing about six tons are

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Ship Policy Up to New Congress

Hope for Legislative Action by Present Congress
is Given Up—Many Bills Ready for Consideration

BY L. W. MOFFETT

DELAY in the enactment of legislation by congress regarding a definite policy for the up-building and maintenance of an American merchant marine is causing considerable comment among those interested in this vital question. Fear is expressed that the longer such legislation is postponed the greater becomes the prospects of government control and operation of a merchant marine with all the inefficiency and inadequacy that such a system means. It even is felt that it might result in America falling back to the shameful position it had been in for 50 years after the Civil war and up to the time of the European war, when its merchant marine was negligible, carrying on an average only about 10 per cent or less of the overseas commerce of the country.

No doubt exists that the sentiment of the country strongly favors a privately owned and operated merchant marine. The public wants to see the United States shipping board dispose of its vessels to this end as quickly as possible, operating only such lines as those that may be used to open new trade routes. But progress looking to this situation is anything but satisfactory and it is not giving promise of taking on an impetus until congress takes action. Analysis of the present situation shows that this is the condition and that hopes that America would soon be either the first or at least the second maritime nation, are being dampened.

Holdes Up Legislation

Both Senator Wesley L. Jones of Washington, chairman of the senate committee on commerce, and Representative William S. Greene of Massachusetts, chairman of the house committee on merchant marine and fisheries, have told a representative of **THE MARINE REVIEW** that there is not the slightest prospect of the passage of any general merchant marine legislation at the current session of congress. Nor does either committee know definitely what policy they may determine upon for the American merchant marine, although both Senator Jones and Representative Greene, as well as a majority of each of the

committees, favor a privately owned and operated merchant marine.

Nor has the shipping board outlined its policy on the subject since the advent of its new regime under Chairman John Barton Payne. Former Chairman Hurley, favored a privately owned and operated merchant marine, and he had laid his policy before both committees. His policy has been mapped out in bills introduced in congress, and members of both committees have either introduced bills of their own on the subject or presented measures "by request" until there is hardly an end to bills informally before the committees dealing either directly with a merchant marine policy or with matters which will be of fundamental importance to it. Some of these bills, because of changing views on the subject and the general haze that still surrounds it, now are disowned and discarded, and are humorously referred to as fatherless children, entirely abandoned by once proud parents.

So the result is that both committees are preparing once more to frame constructive merchant marine measures and to begin hearings on them soon. This is especially true of the senate committee on commerce. Senator Jones is preparing and is about ready to present a comprehensive merchant marine bill which will be intended to constitute all of the more desirable elements of sound legislation on the subject. The senator wants a merchant marine at all costs and has uttered logical remarks on the subject and has made it plain that, while a government operated merchant marine would be preferable to none, he strongly favors a privately owned and operated fleet. His desire is to get down to hearings in earnest on the question at once and to ascertain the views of the shipping board as they may be expressed today.

Difficulty has been experienced by Senator Jones in obtaining even a quorum of his committee to attend hearings on or to discuss the merchant marine, some members claiming to have important meetings of other committees to which they belong. While this is no doubt true, it is held that no subject transcends

in importance that of the merchant marine. Chairman Greene has been more successful on the house side in holding hearings, and has taken up various subjects relating to the merchant marine, but his committee has yet to map out a definite merchant marine policy.

Still Live in Hopes

Both chairman, however, hope to begin legislation on a merchant marine policy soon after the next session of congress convenes in December. They of course do not know how well their hopes may be realized.

The character and status of merchant marine measures before the two committees will be stated in order to give a clearer understanding of the subject, consideration being given only to those measures which may be considered seriously.

Of the many which have come before the senate committee, the one of most importance, but which will be worked over and its better parts incorporated in the new bill being prepared by Senator Jones, is senate bill 153, introduced by Senator Jones. It relates to a merchant marine policy, dealing with the sale, charter and operation of ships owned by the United States and has been described heretofore in these columns. Broadly, it provides for the sale of the larger steel ships now operated by the shipping board to American citizens or corporations, while steel ships of 4200 tons or under may be sold to foreigners if they cannot be disposed of advantageously by sale or charter to Americans. This bill reflects the views outlined by former Chairman Hurley.

The ship mortgage bills, which were before the senate committee, no longer are being considered as at first drawn, but instead it is intended to work out a new measure on this subject which will be in the nature of a compromise of those that have been presented and will not be so objectionable as original bills have been to drydock and ship stores interests. A bill now before the house committee on this subject, it is believed, stands a good chance of being most acceptable and of being passed. The bill providing for government insurance on ships which

was before the senate committee is not favored by Senator Jones and probably will not be considered.

The house committee has a greater number of bills before it. One of them, introduced by Representative Greene, outlines a merchant marine policy similar to that of senate bill 153 and it also has been described by *THE MARINE REVIEW*. Like the senate bill it reflects to a great extent the views of former Chairman Hurley and the majority of the shipping board at the time it was presented. It promises to be worked over, however, according to further ideas that either the committee itself may have, or which it is willing to accept from the shipping board as now constituted.

Bill Meets With Favor

The ship mortgage bill before the house committee, merely in the nature of a committee print at present, appears to find strong favor by many informed on admiralty subjects and by the committee, some of whose members think it will find its way into the statutes. While it perhaps may not be entirely satisfactory to drydocks and ship stores interests, it is understood that some of the most objectionable features of the previous bills on the subject have been removed and that it represents a compromise that may not be combatted strongly by these interests. It was prepared by Judge Charles M. Hough of the United States circuit court of appeals of New York. It is not meant to be suited to the generally supposed requirements of the shipping board with respect to vessels which it is about to sell. Judge Hough holds that as to these vessels any mortgage bill is unnecessary and that the sovereign claim or lien should be made paramount by legislation.

Bills which had been presented heretofore gave mortgage liens priority over liens for ships repairs, etc. The old established maritime custom for drydocks and ship stores companies would thus be greatly affected by such measures. That of Judge Hough confers on ship mortgages practically a first 50 per cent lien, measured by the proceeds at judicial sale. Anything above this 50 per cent limit, he maintains, does two things, both, objectionable in his opinion. First, it deprives the ship of all credit, and, second, it makes out of a mortgage a potent instrument of fraud. The measure as drawn by him provides that "no mortgage covering the whole of any vessel of the United States of 200 gross tons and upward shall be valid against any person other than the mortgagor,

* * * unless such mortgage is recorded and indorsements are made upon the vessel's certificates or registry, or of enrollment and license, as provided." It provides that proceeds derived from a receivership shall be deemed to be the amount remaining after deducting receivership expenses and other court charges, and shall be applied by the court as follows:

"First, to the payment of maritime liens preferred by the act (first mortgages, properly recorded) and maritime liens based upon maritime torts for which intervention shall have been made, in the order of their priorities under the maritime law of the United States; second, a sum equal to 50 per cent of said proceeds to the payment of such foreclosure judgment and plaintiff's costs; third, any remaining balance to the payment of other maritime liens for which intervention shall have been made in the order of their priorities under maritime law; forth, any still remaining balance to the further payment of judgment in foreclosure, and, fifth, any residue to the payment of other incumbrances duly intervening and the mortgagor * * * as interest may be made to appear.

Mortgage Lien Comes First

"Any person furnishing repairs, supplies, or other necessities, including towage and the use of drydock or marine railway, to any vessels, whether foreign or domestic, upon the order of such vessel * * * shall have a maritime lien on the vessel * * * but such lien * * * shall be subordinate to the lien of any first mortgage duly recorded."

Another bill before the house committee, prepared by one of its members, Representative Rowe, which has been reported favorably to the house, and has been approved by the shipping board, changes the seamen's act so that an American citizen who has taken the course at the training school and served nine months on ship board and thereafter passed an examination under the rules prescribed by the United States steamboat inspection service as to physical conditions can be certified as an able seaman. At the present time the recruiting service is securing all the young men it desires, the report on the bill says, and these are drawn from all parts of the country. Most of them, it is declared, are well educated, having completed a high school course, and not a few have spent a year or more in college. Under the provisions of the seamen's act, as it passed on March 4, 1915, it is necessary for a man to serve three years as a common seaman before he can

be an able seaman. There is an exception to this, that after having served on board a ship for one year and taken an examination given under the supervision of the department of commerce he may become an able seaman, but experience has shown that only a few take the examination.

Emergency of war forced the recruiting service to obtain seamen and officers and it is declared the result has shown that able seamen can be made in less than nine months, and both the navy and the shipping board put men as seamen on their ships who had but a brief training of two or three months in their training schools, and all agree they made good.

Considers Radio Bill

In addition to having the aforementioned bills before it, the house committee is holding hearings on the so-called radio bill. The committee's bill is aimed to combat the attempt of the navy department to take over all privately owned radio-telegraph stations and operate them under its jurisdiction. The committee twice has unanimously gone on record in opposition to this proposed policy of the navy department.

All legislation bearing on the subjects named is expected to crystallize within a reasonable time after the next session of congress convenes, and while it is still believed it will result in a privately owned and operated merchant marine, it is acknowledged by informed men in congress who favor such a policy that it cannot be expected to develop at once. Rather, it is pointed out that private interests hardly can absorb all the ships built and being built by the shipping board at one time, but they will ultimately be taken over by private interests. However, in this connection, it is insisted that the shipping board will not in any event dispose of its vessels at other than reasonable prices.

Late Marine Patents

Copies of the following patents can be obtained by sending 15 cents in stamps to Siggers & Siggers, National Union Institute building, Washington, by mentioning *THE MARINE REVIEW*.

1311944—Internal combustion engine, Daniel Appel, Cleveland.

1312036—Hydroplane boat, States Lee Lebby, Charleston, S. C.

1312272—Boat davit, Thoralf Schroder-Nielsen, Horten, Norway, assignor to Christoffer Hannevig and Hannevig Bros., Christiania, Norway.

1312355—Pneumatic folding attachment for keeping damaged vessels afloat, John T. Reid, Lovelock, Nev.

1312356—Submersible cargo carrier or transport, John T. Reid, Lovelock, Nev.

U. S. Bunker Facilities Expand

America Now Controls Coal and Oil Bunkering Stocks on All Important Trade Routes—More Stations Are Planned

ALMOST over night the United States has grown into a maritime power. The construction of the new merchant fleet was the result of the war. America's power in the bunker field, however, has been chiefly the result of after-the-war conditions.

The annual consumption of bunker coal preceding the war was 80,000,000 tons, of which the United States supplied not more than 6,000,000 tons. Today, American coal is being shipped to South American ports and even to the ports of Europe which previously were supplied by England. Coal people feel confident that this country should be able to increase its coal bunker supplies four times what they were before the war. But coal is no longer the prime essential in the bunker field. The new merchant fleet demands oil and in supplying fuel oil to ships none better can be found than that produced in the United States and Mexico. American ship operators

have in the past been compelled to obtain their bunker in foreign ports, chiefly from English merchants. Forced to purchase this essential supply from foreigners, they were inclined to believe the American merchant marine would always be hampered in its operation. This situation is being rapidly wiped away and the year 1920 dawns with a new aspect entirely upon the bunker problem. The change is just in its making, and, while sufficient progress has already been made to recognize the general tendencies, it is impossible at this time to forecast the ultimate result.

The shipping board has been compelled to look into the bunker situation because of the many ships it has in its possession. Before the end of the war was in sight, it was naturally supposed that many bunker

stations would be constructed but this plan has since been materially altered. It will require at least four years for the board to dispose of its ships, however, and in the meantime some bunker stations will naturally fall into its possession, the ultimate disposition of which will depend upon circumstances. Only two stations have so far been established by the board. The first was at St. Thomas in the Virgin islands. Here the board has erected two tanks with a capacity of 55,000 barrels of oil each. It is desired to have on hand

a predominating control of the oil bunker stations in Central and South America, but the English control the situation in Europe. United States stations are planned at Malta and Bizerta and two others are projected on the Italian coast. These should be adequate to keep American shipping supplied most of the time.

Before the war England controlled approximately 65 per cent of the coal bunker stations of the world. The British power was possible as a result of the large export trade England maintained in coal. With the

talk of nationalizing the British mines and the constant trouble experienced with labor since the armistice, the British exports of coal have fallen off materially. American coal interests have frequently been petitioned by British bunker agents at various points of the world to supply them with coal. American coal has, on the other hand, been shipped preferentially to American agents although there has been no



THE EASE WITH WHICH OIL BUNKER IS TAKEN ON IS ILLUSTRATED BY THIS SCENE IN NEW YORK HARBOR

at this station between 400,000 and 500,000 barrels. The navy has erected tanks at Manila which will be kept supplied with oil by the board.

These are the only two stations to date in which the government is interested. The board sent a barge of oil to the Azores early in the fall, to meet the needs of American ships, but no station there is planned. It is understood that the Standard Oil Co. intends to erect and maintain a station in the Azores, and when that is done the government will withdraw. The shipping board has also a large quantity of bunker coal in storage at Rotterdam, but plans no station.

At the present time, it is evident that American interests control the oil bunker facilities in United States ports. American interests also have

concerted action to prevent the British bunker agents obtaining necessary supplies. It has been estimated by experts in the employ of the shipping board, that America today controls approximately 20 per cent of the shipping bunker of the world, out of which is, necessarily, deducted the bunker facilities owned in home ports.

Prior to the war the English exports totaled some 125,000,000 gross tons, of which 99,000,000 tons was coal. Of this enormous quantity of coal exported, at least 22,000,000 tons was for bunker, which gave England an export trade of 77,000,000 tons of merchant coal, coke and similar products. The English exports therefore consisted of but 26,000,000 tons of merchandise and her imports totaled but 40,000,000 tons of all kinds. Since the armistice was signed, great

demands have been made upon Americans to supply the world with coal. Shipments have been made to South America, the Mediterranean and even to the Scandinavian countries past England's door. Freight experts have estimated that during normal times the United States should be able to export at least 23,000,000 tons of coal out of the 77,000,000 tons of merchant coal exported by England in prewar times. This represents only distribution markets which are normally in reach of American shores, where the haul is equidistant or shorter than the haul from England. American coal interests have not made an aggressive attempt to export coal, the English coal miners being the best organized of the world to

In the dominion of Canada the Standard Oil Co. (New Jersey), through the Imperial Oil Co., Ltd., offers bunker facilities at Fort William and Hamilton, Ont.; Halifax, N. S.; Montreal, Que.; Prince Rupert, B. C.; Quebec, Que.; Sarnia and Toronto, Ont.; Vancouver and Victoria, B. C. The company is building a new bunker station at St. John, N. F. This company seeks to supply bunker oil to all ships operating in the Latin-American trade, having stations at Buenos Aires, Compania, Rio de Janeiro, Balboa, Cristobal, Antofagasta, Iquique, Pisagua, Taltal, Tocopilla and Valparaiso. A station is operated at St. Georges, Bermuda. Three new stations are building in Cuba by the West India

The European bunker development depends largely upon the resolution of the political situation. Italy, for instance, is short of fuel and that country is under wartime control. No independent company would think of going into that field until this abnormal situation is relieved. It is understood, however, that at least two bunker stations of large capacity will be established in Italian ports, one on the north shore and one on the south. The Standard Oil Co. of New Jersey had an oil station at Bizerta on the north coast of Africa before the war, but this station was limited by the size of the tank there, 45,000 barrels, and it was supplied with Rumanian oil. This Rumania oil is light and better adapted to distillation than to marine bunker fuel.

When it was determined to turn the Bizerta station into a real bunker station, the company added two tanks of 55,000 barrels capacity each to the equipment, and enlarged the pipes and pumps. This added equipment has already been shipped. The station, most likely, will be kept supplied with Mexican fuel oil. This is a station that can easily serve most of the steamship lines entering the Mediterranean. Those vessels going north to Genoa or Trieste and such ports, however, would find it necessary to cross over the sea to this port for bunker. Such a crossing would undoubtedly be unduly expensive and therefore other stations will be necessary along the Italian coast. The Vacuum Oil Co., through an arrangement with the Standard Oil Co. of New Jersey, offers bunker at Port Said, Egypt.

The Standard Oil Co. of New York has no bunker facilities in Europe. That field is left to the New Jersey company. The New York company does, however, hold itself out to supply bunker oil to any ship applying at the ports of New York and Boston. This company also offers Providence, R. I., as a bunker port, at which place a new refinery is projected.

The New York company has some plans in view to develop the Oriental field. It has had stations at Yokohama, Shanghai and Hong Kong, but these stations heretofore have been for the purpose only of meeting the needs of the company's own vessels. The storage capacity at each of these ports has been approximately 35,000 barrels. They will be opened up to the public and fuel offered for sale to all ships applying. It may be necessary to increase the storage capacity by doubling the old storage facilities, and, at the same time, in-



THE HERBERT G. WYLIE OF THE MEXICAN PETROLEUM CO.'S FLEET—A TYPICAL OIL BURNING TANKER

go after foreign trade. Recent developments have altered this considerably and now the American coal interests have taken steps to organize an export corporation.

American ports are today well supplied with bunker oil, which is a situation entirely different from what it was prior to the war. At the port of New York alone over 3,000,000 barrels of bunker oil are carried in storage, of which amount the Standard Oil Co. alone supplies one-third. The Standard Oil Co. of New Jersey advises that it has stations at which steamships can obtain supplies at Baltimore, Baton Rouge, La., New Orleans, New York and Norfolk, Va. The station at Sewell's point, near Norfolk, was constructed at a cost of approximately \$1,750,000. The pier involved an outlay of about \$700,000, and oil is delivered at either the pier or by barges of the company.

Co., a Standard Oil subsidiary. These are at Antilla, Nuevitas and Cienfuegos. A new station is also under construction at Curacao in the Dutch West Indies.

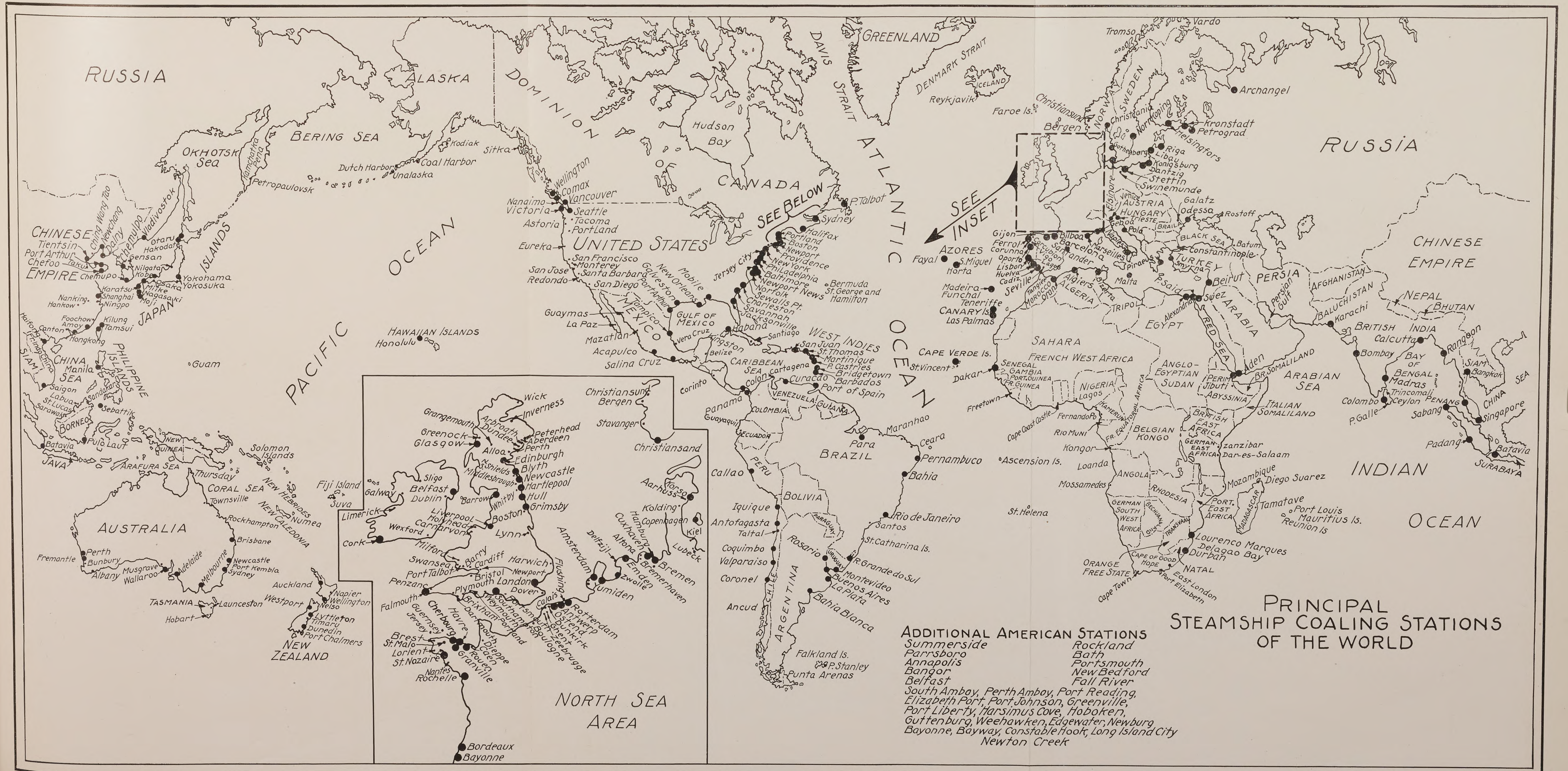
The Standard Oil is already established in European ports. Its subsidiary, the Det Danske Petroleum Aktieselskab, offers bunker at Aalborg, Copenhagen and Odense in Denmark, at Gothenburg in Sweden, and Bergen, Norway. Its subsidiary, the Societa Italo-Americana Pel Petrolio, offers bunker at Genoa, Monopoli, Portici, Savona and Venice in Italy. The subsidiary, the Anglo-American Oil Co., Ltd., offers bunker at Avonmouth, Brixham, Birkenhead, Cardiff, Liverpool, Manchester, Purgleet, Southampton and Sunderland in the United Kingdom. A station is maintained at Tampico in Mexico, at Montevideo in Uruguay, and at Callao, Paita and Talara in Peru.

Oil Bunkering Stations of the World, Showing Location and National Ownership



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Principal Steamship Coaling Stations of the World, with Special Map of North Sea Area



creasing the fleet of tankers for keeping these stocks up. The one tanker owned by the company and used to supply these stations had a capacity of about 43,000 barrels. It has been necessary to charter other tankers upon occasion to keep up the supplies. Undoubtedly, the company will have other tankers built for this service and these, it is understood, will be of a size capable of transporting from 75,000 to 100,000 barrels each.

With such a fleet as this, the New York company hopes to increase its bunker stations in the Orient. Facilities will be provided at Singapore, Colombo, Calcutta and Bombay. In the Oriental field, however, the American interests are confronted with some very aggressive British oil companies. The Asiatic Petroleum Co., which is the selling company of the Royal Dutch Petroleum Co., obtains its supplies from Borneo and Sumatra. The American interests will take their supplies from California, Texas and Mexico.

The Sinclair Oil Co., with which during the past year or so has been consolidated a number of independent oil companies, has nine stations at which bunker oil can be supplied ships. This company naturally has many other stations but they are not equipped to offer facilities to the merchant marine. The stations at which ocean vessels can be accommodated are Philadelphia; Jacksonville, Fla.; New Orleans; Westwego, La.; Houston, Tex.; Tampico, Mexico; Havana, Manati and Matanzas, Cuba. This company, naturally, in keeping with its expansion, has projected a bunker station in the harbor of New York. It also intends to have stations at Tiverton, R. I.; Port Aransas, Tex.; and four more stations in Cuba at Cienfuegos and Santiago on the south coast, and Antilla and Belig on the north coast. The Sinclair company will undoubtedly place its dependence on Mexican oil for bunker purposes.

A high grade bunker oil requires practically no heating to be burned successfully. The heavy Mexican oil, however, does require preheating when used in the cooler climates further north. Some of the Texas and other oils produced in the United States, however, can be stored in and handled out of peak holds or double bottoms even if not equipped with steam coils and meet all conditions of handling due to the limited sizes of pumps or lines, but few vessel operators would take such a risk unless his fleet were engaged in a trade where the climatic conditions are not of an extremely cold nature.

The Texas Co. is prepared to sell bunker oil to all vessels at Providence, R. I., New York, Philadelphia, Baltimore, Norfolk, Va., Charleston, S. C., Galveston Tex., Port Aransas, Tex., and Colon, Panama. The depth of the water at the stations of this company varies from a minimum of 21 feet at Tampa to a maximum of 30 feet at New Orleans. But the company offers, if required, to make delivery by lighter to ship's side at practically all of these ports on short notice.

The Mexican Petroleum Co. has also been actively engaged in providing oil bunker stations. It has stations at Portland, Me., Boston, Providence, R. I., New York, Norfolk, Va., Jacksonville, Fla., Tampa, Fla., and New Orleans in the United States. It has a station at Tampico, Mexico, and two in Brazil, Rio Janeiro and Bahia. In conjunction with the Union Petroleum Co., bunker is offered at Philadelphia. Construction work was recently started on the Norfolk station. The United States government does not allow privately owned pipe lines or equipment on the canal, but the Mexican Petroleum Co. offers bunker at Cristobal from the government tank farm at Mount Hope, deliveries being made through government pipe lines and pumps to oiling docks supplied by the government.

These are but the outstanding American interests actively engaged in providing oil bunker to merchant vessels. Nearly every company has an interest in the development and have one or more stations where ships can obtain supplies.

The coal interests of America have, very naturally, been aroused to the potential possibilities by the conditions which have arisen since the armistice. The coal people have their association now and an export combination has been seriously discussed. Such a movement as this is certain to place American-owned bunker in an enviable position. It may be some time before the United States rises to a predominating position in the bunker industry, and it may be that such a time will never come. At the present, however, the United States enjoys an enviable position in the supply of bunker to the maritime fleets of the world and it is capable of growing into a position equal to that of any other maritime nation.

Refitting British Fleet

(Concluded from Page 530)

conveyed to the docks in steamers.

The existing docks are fitted with compressed air and electric welding apparatus for making temporary re-

pairs to enable ships to reach their destination. The new drydock will be provided with the most modern equipment, including a large pumping station and culverts, with winches, bollards, slyways, electric lights and traveling cranes. Access to the docks from the sides will be by four flights of granite steps, with occasional vertical ladders between, and from the sea entrance by a pair of steel dock gates to be controlled by the latest type of machinery.

Large engineering and plate shops are now being built between the new graving docks and the existing drydocks. In the plate shops, the ship plates, as they are received from South Wales or the North of England or Scotland, will be fabricated, and in the engineering shops all kinds of engineering work connected with shipbuilding and ship repairing will be carried out. Each of the shops is to be 300 feet long with spans of 64 feet designed to carry 20-ton electric cranes, traveling at the rate of 300 feet per minute. It is also proposed to have a full salvage equipment at the port, so that assistance may be rendered to any vessels in trouble and they may be brought into Falmouth and repaired as quickly as possible.

The immediate object of the development of the docks is to increase repairing facilities, and the suggestion has been made that over the dock gates should be displayed in large letters the legend, "Repairs While You Wait."

Recently a bill was passed by parliament for building deep water wharves and passenger landing jetties at St. Just, on the eastern side of Falmouth bay. Hitherto St. Just-in-Roseland has been famous mainly for a beautiful thirteenth century church. The development of the St. Just project would involve the building of a railroad to connect with the Great Western railroad, which serves Falmouth. Whether the St. Just project is proceeded with or not, the port of Falmouth will be assured increased prosperity through the additional facilities now being provided on its own shores. These developments are in strong hands, and it is quite certain that in one way or another much will be heard of Falmouth in the future. It will certainly be a port much frequented by American ships. One of the lessons which Great Britain learned during the war was that improved facilities must be provided for ship repairing. The work now proceeding at Falmouth is a notable example of what is being done in this direction.

Making Ship Securities Popular

Fresh Millions Are Going Into New American Steamship Lines—
Congress Asked to Alter Mortgage Statutes to Promote Investment

BY V. G. IDEN

BEFORE the war, the ocean going merchant fleet of the United States was around 2,000,000 tons. At that time, new tonnage could be purchased for about \$45. The American fleet, upon a fair assumption, was valued at \$100,000,000. Before the end of August, 1919, the shipping board had disposed of over \$100,000,000 worth of ships. Fifty per cent of their purchase value was to be paid in the first year. Some of these vessels have been sold for foreign account as the sales through agents would indicate. But it is understood to be the intention of the shipping board to continue these sales as rapidly as the private operators can absorb them. It is but reasonable to expect, therefore, that the cash to be derived from government ship sales this year will approximate \$100,000,000.

This conservative estimate indicates that the new capital going into shipping enterprises during the current year will at least equal the estimated capital invested in the total ocean going merchant fleet of the United States prior to the war. Bankers are fully aware of what this means, but the figure apparently does not stagger them at all. They have learned to deal in larger sums since 1914, and the capital which is being invested in American shipping this year on private account does not amaze them.

American bankers could with facility invest two or three billion dollars in shipping did the situation warrant it, and thereby relieve the government of all liens it now has upon merchant vessels. They have not gone into this industry more extensively because of the many other emergency demands for money. For instance, there is the foreign trade situation and the international credits which must be provided if the foreign trade of the United States is to be continued. They have been striving to bring order out of that chaos and such funds as they have will naturally go for that purpose first.

Such investments as are now being made in a private way in shipping are being made by the practical and successful ship operators. Some persons with money have been drawn into the business because of the extraordinary returns which water transportation is just now giving. There have been international merchants, industrial concerns and others similarly situated who have suddenly awakened to the fact that they must have a fleet of their own. Gov-

ernmental commandeering of cargo space has too often prevented them making a shipment to a customer.

This profitable return to ship operators promises to continue for some years to come. That is the consensus of opinion. For the moment, therefore, the comparative cost of ship operation under the various flags of the world does not present that obstacle it will in the future. At the present time the wages paid on American vessels are higher than on English ships, and yet England still holds a large percentage of the British vessels under requisition. Sales made by the shipping board to private operators release that ship entirely to the control of the purchasers. The operator can take the ship in such trade as is most profitable and he can take full benefit of the ocean freights which the market is offering. Such a concession is worth considerable money and undoubtedly recompenses the American operator for the discrepancy in the costs of operation.

It would appear, however, from the present outlook that the investments which are today being made in shipping are not entirely free from that speculative feature which dominated the shipping market during the war. The operator who purchases must speculate upon what the shipping conditions will be in the future. He must speculate upon the maritime policy which our government is likely to formulate within the next year or so. He must speculate upon the conditions which are likely to prevail under foreign flags a few years hence. As a permanent investment proposition, shipping does not today offer the safeguards which conservative banking demands. For that matter few industries in the world offer absolute assurance, and will not so long as the social unrest continues and political conditions remain unsolved.

Cost Problem is Worldwide

Even the Japanese, who have probably the lowest labor costs in the world, are today having trouble with strikes. Many Japanese seamen served on the Japanese ships chartered by the United States during the war, and they received American pay for overtime. That experience has caused much discontent. In the Scandinavian countries, whose peoples are navigators of long experience, the seamen are agitating for an 8-hour day on the high seas. The Eng-

lish operators are not certain that the 8-hour day will not be forced upon them. It is therefore impossible to say what it is going to cost to operate ships under any particular flag even one year from now.

Ship operators have long been known as a class of bold citizens who were able to foresee possibilities where others could not. It has been an industry in which the "long chance" has often predominated. At this moment, somewhat the same conditions prevails despite the current high ocean rates and the obvious handsome returns which are to be had from a ship.

New shipping companies with an aggregate capitalization of at least \$50,000,000 have been incorporated each month for the last few months. This, naturally, does not represent all the money which is being invested in American shipping by any means as the older established companies have funds which they are making use of in wise extensions. The undistributed surplus of the old companies has undoubtedly amounted to a large sum, as profits from shipping have been tremendous since 1914. Wise ship operators may be depended upon not to permit their fleets to become behindhand with the times.

The shipping board is striving to encourage small purchasers by revising the mortgage law so that bankers will more readily lend money on such vessels as are purchased. There are two schools of thought in regard to the new mortgage scheme of the shipping board. On one hand it is contended that skillfully operated shipping corporations will not find it difficult to obtain loans from investors when loans are necessary and that the old condition should continue. They insist that if the mortgage plan is drafted into the law the problem of owning ships will be taken largely out of the hands of the operating companies and made a bankers' matter.

But not all the people who would engage in ship operation are able at the outset to float a company of sufficient capital to permit the purchase of an adequate fleet. Much of their capital subscription must be taken up with executive and agency office expenses, overhead, the procurement of terminals and similar expenses. These are the people who will benefit the most proportionately from a revision of the mortgage statutes and if their desires prevail the possession of merchant fleets would be dis-

tributed much more generally than otherwise would be the case. It is evident that the shipping board is inclined to assist in this movement and to oppose the creation of any situation which would encourage the creation of any one or of a few large shipping combinations under the American flag.

There does not appear to have been any fear that private capital will not be found to invest in ships. The sales that have already been made have been to established steamship operators and brokers. Often sales have been lost because of the constant dickering, delay and general dissatisfaction with the manner in which the government deals with an offer to buy. More recently, it has been pointed out by potential pur-

chases. But these organizations have a difficult fight before them. The money which they are capable of bringing together to put into their business cannot all be invested in ships. It is necessary for them to have offices, executive organizations, terminals, agencies and the multitudinous facilities which go to make up a successfully operated steamship line. For the most part, these new organizations have as yet been content to concern themselves with such ships as they could charter and such as the shipping board would allocate to them for operation. They are all, however, potential purchasers of American ships.

American bankers as a group, have officially spoken of the ocean transportation question in only a general way.

today. We believe that in this attitude will be found the greatest encouragement and the greatest stimulus for individual initiative. If the government should decide to dispose of its shipping after first fixing a reasonable price thereon, the plan will probably call for possibly 25 per cent of the agreed price, the balance to be paid in installments. Having in mind that this arrangement, if it be adopted, will call for financing on the part of the banks, our committee has appointed a special subcommittee, to study, formulate and recommend a safe and consistent plan of ship financing for the benefit and guidance of all concerned."

This subcommittee has not as yet had anything to say. The full committee,



AT THE LEFT IS SHOWN ONE OF THE MOST FAMOUS BANKING SITES IN THE WORLD, WALL STREET, NEW YORK—THIS NARROW THOROUGHFARE IS THE FINANCIAL CENTER OF NORTH AMERICA—THE ILLUSTRATION AT THE RIGHT SHOWS THE ROYAL STOCK EXCHANGE AND THREADNEEDLE STREET, LONDON—FROM THIS BUSY CENTER INDUSTRIES IN ALL PARTS OF THE WORLD HAVE BEEN FINANCED

chasers, the shipping board has given no guarantee that the depreciated value of these ships will be written off at some time between now and the date of final payment. The original plan to require the purchaser to pay but 25 per cent of the purchase price and apportion the remaining payments over a period of 10 years, has not been followed out. Instead, the shipping board is demanding the first payment of 25 per cent and 25 per cent more within six months, the whole to be paid within three years. This is a scheme of payment which is calculated to appeal to the vessel broker with more force than to a permanent holder and operator of a ship, and it will be noted that a fair proportion of the ships disposed of by the shipping board have gone to brokers and agents, some of whom at least intend to resell these vessels to foreigners.

Many men of shipping experience are striving to get into the business on their own account. Some rather aggressive shipping companies have been organized by men of broad ship-operating ex-

The American Bankers' association appointed a committee on commerce and marine to study the question and make recommendations. John McHugh of the Mechanics & Metals National bank, New York, is chairman of this committee. The only report so far made by this committee was an indorsement of the private ownership of vessels under the American flag.

The committee recommended "that government ownership or government operation of our shipping is not to the best interest of our people. We believe that the government should dispose of the shipping which it has accumulated since we entered the war and at prices which will permit private ownership and operation at reasonable profit. We further believe a decision in regard to these prices should be reached after proper investigation and consideration, as early as possible. We are further confidently of the opinion that the government should adopt a definite policy that it will in no manner or form compete with established steamship lines, as is the case

however, further expressed its opinion, saying:

"The committee considers that the question of ocean transportation is highly important, but that it is by no means predominant, and hopes that bankers, while giving it all needed consideration, will apply themselves particularly to distinctly financial questions, of unquestioned urgency. In this connection, it might not be amiss to emphasize that there may be a disposition to consider that the financing of our shipping and foreign trade are particularly and distinctly matters calling for the attention only of the large banking institutions of the country, but is believed by the committee that one of the lessons of the war is that the prices that prevail for the products of the farm and output of our factories are possible only as the result of the fact that such output and such products have found foreign markets. If those markets be shut off for any reason, whether it be competition or the lack of facility, a reflection will quickly be found in the prices of com-

modities which we produce. Therefore, it is safe to say that the small banker as well as the large one will come to recognize, if he does not already do so, that the best interest of the community he serves will be found in the support which he as well as others in his community give to these important questions."

In well worded phrases the American Bankers' association, therefore, "passed the buck," as it would be expressed in street parlance. There are extenuating circumstances undoubtedly and bankers have a right to investigate shipping under the American flag thoroughly before they mark it up as a safe investment proposition. Their hesitancy in throwing their full and hearty support to this industry has not been entirely the result of their doubt of its possible profits. The International Mercantile Marine wished to dispose of its British ships to a British syndicate. Some of the most important financial interests of this country opposed the sale of any part of the fleet of this, the most important American shipping company. The American International Corp. of the National City bank interests, is heavily involved in the International Mercantile Marine. It is also interested in the Grace fleet, the Pacific Mail and the Atlantic, Gulf & West Indies. These investors are expecting handsome returns from such properties and they are holding on to them.

Furthermore it has been long rumored in the market that the Harriman interests have been investing in these same shipping properties and that the probable outcome would be a vast combination of merchant fleets under the American flag to engage in coasting as well as foreign trade. Such a combination, should it come about, would be but a natural buffer for similar shipping combinations under way in foreign countries. A similar movement has been seen in Italy in connection with the Ansaldo interests, in England under the Cunard banner, and even the Japanese have projected a great shipping combine under the Japanese flag.

Do Not Understand Situation

American banks have had no experience in handling ship securities. They have been more concerned with the floating of securities issued on industrial undertakings on land, such as hydraulic plants, railways and public utilities. The lawyers employed by the bonding houses have not been inclined to advise any wide issue of ship securities as they were never satisfied with the safety of such documents. American vessels have been subjected to many prior claims brought by seamen, salvagers and repair yards, chandlers, and others. As a result of this situation, American bankers have been disinclined to advance large loans

to a ship operator against the purchase of a vessel. It has seldom been possible for an American operator to borrow more than 45 per cent of the purchase price. This means that he has been compelled to put up more than 50 per cent in cash when he wished to add to his fleet.

In England, the situation is different. First mortgage on British vessels are given better security, and an English operator can often borrow as much as 70 per cent of the original purchase price from his bankers. The British, therefore, encouraged small owners to go into the shipping business, whereas Americans could not engage upon maritime adventures unless they possessed large capital. A continuation of this discrimination against the American ship operator is of more concern than any other feature of the shipping situation at the present moment, and the shipping board has its plan to alter this condition. A new ship mortgage act has been introduced at the instance of the shipping board and this will undoubtedly be enacted, despite some opposition.

The opinion has been expressed in Washington that if the mortgage problem could be placed upon an equality with England's, and American ship operators enabled to borrow from American bankers at least 70 per cent of the purchase price of a ship, the tonnage now in the possession of the shipping board could and would be disposed of to private interests within four years. Within a comparatively short time, therefore, the government could withdraw from the business of shipowning and the business placed upon a firm foundation in the possession of the individual citizenship. While the proposed amendment to the ship-mortgage laws was being discussed in congress, the shipping board called into consultation some of the leading security bankers of the country. The question was laid before them carefully and their assistance requested.

As a result of this conference, a committee of this class of bankers was appointed for the purpose of striving to standardize the forms to be used in placing mortgages and issuing securities based thereon on the various classes of vessels. It is hoped to place the merchant tonnage in various classes for mortgage purposes. This will necessitate a grouping of the government ships according to size, rating given by classification societies, equipment, and the quality of their construction. The bankers would then determine upon mortgage forms and forms for security issues thereon in each instance, and would recommend differentials to be used between the various classes of ships.

This work of the bankers is purely advisory, but the shipping board and the government will undoubtedly give it

most serious attention. Members of the shipping board have acknowledged that the bankers must be assured of a sincere intent on the part of the government to protect the property security offered for mortgages which the bankers are expected to place. Furthermore, to make this selling plan a success, it is necessary to convince the banking public in general that the price of ships is solid. Probably it will be necessary to reduce the quotations made on ships offered for sale by the government to bring this about, but it is expected that prices will not recede greatly. At the present time, the sales policy of the shipping board is to dispose of a ship at a price which will be the prevailing price at least six months hence. A spot delivery of a ship today at a delivery price of six months hence is considered a good financial proposition and is one that the investment bankers fully appreciated.

Has Sold Many Ships

In the meantime, the shipping board has been striving to sell its ships without the mortgage safeguard which is being planned for the protection of the investment bankers. But the shipping board has been compelled to enter into these sales as congress left it this way to raise money with which to complete the shipbuilding contracts. The appropriations made for the building of ships during the current year were cut \$70,000,000 intentionally, as it was expected to raise this much money through cash from ship sales. The shipping board had sold over \$125,000,000 worth of ships on the first of October. Some of these had been sold for 25 per cent cash, whereas others had been disposed of for 50 per cent cash, during the first year. It is easily seen that the shipping board will have no difficulty in raising \$70,000,000 in cash from ship sales this year. At the same time there has been shown no disposition to limit sales merely because this sum is raised. Nor is the shipping board disposed to hold off sales until such a time as the mortgage law is enacted by congress.

The important section of the proposed mortgage act, as introduced in congress, provides: "Any person furnishing repairs, supplies, or other necessities, including the use of drydock or marine railway, to any vessel, whether foreign or domestic, upon the order of the owner of such vessel, or of a person by them or by him authorized, shall have a maritime lien on the vessel which may be enforced by proceeding *in rem*, and it shall not be necessary to allege or prove that credit was given to the vessel; but such lien and all other maritime liens arising out of, or created by, any maritime contract, except for wages and salvage, shall be subordinate to the lien of any mortgage filed for record in the office of the collector of customs and noted

upon the certificates of registry, or of enrollment and license, as hereinbefore provided in sections one, two and three of this act, and any vessel sold, under any such aforesaid lien arising out of any such maritime contract, to pay the indebtedness secured thereby, shall be sold subject to, and such sale shall not impair the security of, any such mortgage." The proposed law would be enforced before the district courts of the United States. It suggested the further provision: "This act shall supersede the provisions of all state statutes conferring lien on vessels, insofar as the same purport to create rights of action to be enforced by proceedings in rem against vessels for repairs, supplies and other necessities, or which provide for recording or foreclosure of mortgages on vessels." There is no doubt but that the shipping board has been, and still is, hampered in its efforts to dispose of its tonnage to private interests. Under any federal statute not specially designed to meet such a situation there would naturally be much red tape. A change in the head of the shipping board has not facilitated these sales in the least, but rather checked them until the shipping public had an opportunity to discover the policies of the new chairman of the board. One of the greatest drawbacks to quick sales after negotiations have been opened with the government,

is the lack of credit information on the prospective purchaser. Any man having in hand 25 per cent of the purchase price in cash and proper credit rating is able to buy a ship from the government, but it has been difficult in the past to rate a purchaser's credit. Were the banks actively engaged in financing ship operators this problem

would have been greatly alleviated for the shipping board, but bankers in the United States, as a class, have not been sufficiently interested in this enterprise. As a consequence the shipping board found it necessary to establish a credit department patterning it after the fashion of the credit departments in the larger metropolitan banks. A banking

expert from one of the institutions in New York was drafted into the service of the ship-sales division of the shipping board to take charge. When a sale was proposed the purchaser was referred to the credit officer in the natural course of events. His credit potentialities were scrutinized with the same exactitude as it would have been by a well established and conservative bank. This scrutiny was, however, slower and some times more irksome as the banks have build up their credit data through the years whereas the credit agent of the shipping board was compelled to go out in search of what he thought necessary to have. This is purely a temporary expedient although it is possible that a credit expert will be needed by the shipping board until all the government ships are sold. On the other hand were the mortgage law such as to bring the investment bankers into the field of maritime operations, the work of the credit man would be greatly simplified, and the board could feel assured of the outcome:

List of Shipping Board Vessels Sold

UP TO and including Sept. 25, the United States shipping board has sold 715,000 deadweight tons of ships. The following table, recently compiled by the board, gives the vessel's name, type, deadweight tonnage, price per deadweight ton and the purchaser.

Steamer	Type	Deadweight tonnage	Price per deadweight ton	Purchaser
Beechland	Wood Cargo	4929	\$145.00 approx.	Nacirema S. S. Corp.
Airlie	Wood Cargo	4000	145.00 approx.	Nacirema S. S. Corp.
Alderman	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Argenta	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Ashburn	Wood Cargo	4000	145.00 approx.	Nacirema S. S. Corp.
Birchleaf	Wood Cargo	4000	145.00 approx.	Nacirema S. S. Corp.
Cowardin	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Delana	Wood Cargo	4000	145.00 approx.	Nacirema S. S. Corp.
Horado	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Itompa	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Matenna	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Neabco	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Nawitka	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
Thala	Wood Cargo	4000	145.00 approx.	Nacirema S. S. Corp.
Zavallo	Wood Cargo	4700	145.00 approx.	Nacirema S. S. Corp.
*Yehama	Wood Cargo	3500	28.57	Fidelity Trust Co.
*Blue Hill	Steel Cargo	4000	37.50	Massey S. S. Co.
*Frontenac	Steel Cargo	3500	24.30	Davie S. B. & Rprg. Co.
*Manola (stern portion only)	Steel Cargo	3600	21.53	Davie S. B. & Rprg. Co.
*Adrian Islen	Steel Collier	3075	65.00	Hall Coal Corp.
*Lucius W. Robinson	Steel Collier	2824	70.82	Hall Coal Corp.
*A. D. Maetier	Steel Collier	2920	67.80	Hall Coal Corp.
Mazama	Wood Cargo	3500	110.00	French American Line.
Coyote	Wood Cargo	3500	110.00	French American Line.
*Red Cloud	Composite	3500	57.00	French American Line.
*Kenahac	Composite	3500	57.00	French American Line.
Clackamas	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Anoka	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Bell Brook	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Cresap	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Braeburn	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Braxton	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
New Britain	Steel Cargo	7814	225.00	J. E. Dockendorff & Co.
Santa Tecla	Steel Cargo	3954	210.00	W. R. Grace & Co.
Mineola	Steel Cargo	3954	210.00	W. R. Grace & Co.
*Chas. R. Van Hise	Steel Cargo	7500	30.00	Parsley & Morrow S. S. Co.
Brookwood	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Brentwood	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Bushong	Wood Cargo	3416	115.00 approx.	Nacirema S. S. Corp.
Butte	Wood Cargo	4500	115.00 approx.	Nacirema S. S. Corp.
Bushrod	Wood Cargo	4500	115.00 approx.	Nacirema S. S. Corp.
Buttonwood	Wood Cargo	3416	115.00 approx.	Nacirema S. S. Corp.
Byfield	Wood Cargo	4500	115.00 approx.	Nacirema S. S. Corp.
Mindero	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Awensdaw	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Cartona	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Corone	Wood Cargo	4000	115.00 approx.	Nacirema S. S. Corp.
Dertona	Wood Cargo	4500	115.00 approx.	Nacirema S. S. Corp.
Deva	Wood Cargo	4500	115.00 approx.	Nacirema S. S. Corp.
Diana	Wood Cargo	4500	115.00 approx.	Nacirema S. S. Corp.
*F. P. Jones	Steel Collier	2850	27.37	Edw. P. Farley & Co., Inc.
Wisconsin Bridge	Steel Cargo	5336	210.00	French American Line.
West Catanace	Steel Cargo	7900	225.00	El Dorado S. S. Co.
Deerfield	Steel Refrig.	9700	255.00	El Dorado S. S. Co.
Neponset	Steel Refrig.	9700	255.00	El Dorado S. S. Co.
Donera	Steel Cargo	9600	220.00	Oriental Nav. Co.
Huachuca	Steel Cargo	7400	215.00	Orinoco Steamship Co.
Redondo	Steel Cargo	5900	210.00	Frank & Joseph, Auditors.
Point Lobos	Steel Cargo	3760	200.00	Pacific Mail S. S. Co.
Point Adams	Steel Cargo	3760	200.00	Pacific Mail S. S. Co.
Point Judith	Steel Cargo	3760	200.00	Pacific Mail S. S. Co.
Point Bonita	Steel Cargo	3760	200.00	Pacific Mail S. S. Co.
Columbia	Steel Cargo	2600	150.00	W. R. Grace & Co.
*E. C. Pope	Steel Cargo	4000	25.00	Fidelity Trust Co.
*Maruba	Steel Cargo	3800	75.00	Fidelity Trust Co.
*North Wind	Steel Cargo	3225	62.02	Fidelity Trust Co.
Richmond Borough	Steel Cargo	7500	215.00	Williams S. S. Co.
100 Lake Type	Steel Cargo	3550	210.00	Anderson Overseas Corp.
20	Wooden	3500	90.00	Foreign Interests.
Lydia	Steel Cargo	5938	165.00	Frank & Joseph, Auditors.
Sacramento	Steel Cargo	7462	215.00	Frank & Joseph, Auditors.
*Lake Oneida	Steel Cargo	3513	76.85	Astoria Mahogany Co.
*Lake Mohonk	Steel Cargo	3513	76.85	Astoria Mahogany Co.
Vanada	Steel Cargo	9400	225.00	Virginia S. B. Corp.

* Ships sold at reduced price on account of inferior condition due to collisions, wreck, etc.

Marine News in a Personal Way

Intimate Gossip About What Leaders in the
Maritime World Are Doing

HARRY L. McDONALD has been appointed assistant director of operations for the United States shipping board, Great Lakes district. He succeeds the late Maj. John L. Crossthwaite Jr., who was killed Sept. 5 in an automobile accident at Cleveland. Mr. McDonald has been with the shipping board since the Cleveland office was opened by Walter Williams. Formerly Mr. McDonald was connected with the ore and coal exchange, being assigned to the coal pool in 1917. The object of this pool was to direct the movement of coal on the Great Lakes during the war. Mr. McDonald's business career began with the Pennsylvania railroad with which he was connected for 16 years. He is a native of Williamsport, Pa. In his present position, he will direct the movement of all vessels building at Great Lakes' yards for the shipping board.

* * *

HERBERT D. EHRLIM, Boston, has resigned as director of the industrial relation division of the United States shipping board. Before going with the board, Mr. Ehrim was associated with the New England Fuel association. He is an attorney and will now return to the practice of his profession.

* * *

JOSEPH M. SHEA, general Boston agent of the Canadian Steamship lines and of the Canadian Transatlantic Co., will sever his connection with both concerns to enter the organization of the Cosmopolitan Trust Co., Boston. He has been in charge of the Canadian Steamship lines for four years and is well known in transportation circles. DAVID KEDDIE will succeed him.

* * *

F. L. PICKERING has been appointed general passenger agent of the Coastwise Steamship lines by the United States railroad administration.

* * *

CAPT. ALBERT C. CRANDLE, Winthrop, Mass., formerly inspector of steam vessels for the Boston district, has been appointed commander of the United States shipping board wooden steamer, STURGEON BAY. His new work will be in connection with training men. Recruits will be given the benefit of actual sea service and the STURGEON BAY

will ply regularly between New York and Cuba. This vessel is a Great Lakes product and was fully described in THE MARINE REVIEW for September, 1918.

* * *

REAR ADMIRAL HERBERT O. DUNN, commandant of the first naval district, has recently occupied his new quarters in building No. 5 at the Boston navy yard.

* * *

E. A. HUNT, first officer of the CITY OF ROME, has resigned his berth to



HARRY L. McDONALD

take command of the 3-mast schooner ADDIE MCFADDEN, of South Providence, R. I.

* * *

CAPT. FOSTER GRAY, who entered the naval services at the time the war broke out, has now resumed his old command of the Colonial liner LEXINGTON.

* * *

H. I. Kahn has been made manager of the branch office recently established at Birmingham, Ala., in the Jefferson county bank building by the Keller Pneumatic Tool Co., Chicago, and Grand Haven, Mich. W. H. Woody, division manager for the Keller company at Washington, with offices in the Munsey building, has been awarded a victory loan medal, made from German cannon. This medal was granted to Mr. Woody

by the Portsmouth, Va., liberty loan committee, for services rendered by him in the five loan campaigns.

* * *

H. W. PHILBROOK recently was appointed district manager of the Schutte & Koerting Co.'s New York office. The company is a manufacturer of valves, condensers, oil firing equipment, etc., having its main office and plant at Philadelphia. Previous to his recent appointment, Mr. Philbrook was with the General Electric Co., Schenectady, N. Y., in connection with the construction of steam turbines.

* * *

HERBERT C. SADLER has resigned his active connection with the United States shipping board as naval architect and consulting engineer and has resumed his former work as professor of naval architecture and marine engineering at the University of Michigan. Professor Sadler also is resuming his general consulting practice.

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CAPT. A. C. VAIL, U. S. N., has been assigned to the cruiser MINNEAPOLIS and will make Seattle his home port. Before the war, he was an officer in charge of the navy branch in Seattle of the hydrographic office, officer in charge of the navy recruiting station and inspector-instructor to the Washington naval militia. When the country became involved in the war, he was appointed wireless censor in Seattle with the rank of lieutenant commander. In June, 1917, he was ordered to the other side of the Atlantic and left Seattle on July 1, 1917, going to Kirkwall, Orkney islands, where he joined the American fleet's mine-laying squadron in the North sea. With the signing of the armistice and the close of hostilities, the mine-laying squadron reversed its work, becoming a mine-sweeping squadron and Captain Vail remained in that duty until recently.

* * *

GEORGE F. THORNDYKE, of the shipping firm of Thorndyke & Trenholme, is returning from a two months' trip to Japan where he made connections for his company. Mr. Thorndyke has been an active figure in Pacific shipping circles for years. More recently his firm has acted as agent at Seattle for the French government for whom it handled a large fleet of carriers.

Marine News in a Personal Way

Intimate Gossip About What Leaders in the
Maritime World Are Doing

CAPT. KERMIT ROOSEVELT has accepted the position of secretary of the American Ship & Commerce Corp., Philadelphia. Aside from his duties as secretary, Captain Roosevelt will take an active interest in the business of the Kerr Navigation Co., a subsidiary of the American corporation. Captain Roosevelt saw active service during the war. He first enlisted with the British forces in Mesopotamia. Later he joined the American Expeditionary forces in France.

C. D'ARMAND, who formerly was connected with Simpson, Spence & Young, has joined the staff of Calligan, Atkinson & Co., ship brokers and operators, New York.

F. W. LEAHY has been appointed marine sales manager for the Diamond Power Specialty Co., with offices at 32 Broadway, New York. Mr. Leahy was born in San Francisco in 1886 and received his education on the Pacific coast. He is a graduate of Santa Clara college. After leaving college he served an apprenticeship at the machinist's trade with the Boston Engineering Co. Then he went to sea as a cadet in the engine room of the ADMIRAL FARRAGUT, a United Fruit line boat that sailed between Boston and the West Indies. He was at sea seven years rising to the position of chief engineer. Then he became part owner and manager of the Marine Repair Works, Los Angeles. Later he became manager of the boiler feed water treatment department of the Moore Oil Co., Cincinnati. During the war, Mr. Leahy served with the Emergency Fleet corporation in charge of engine building and inspecting. He is a member of the American Society of Marine Engineers, Society of Naval Engineers and the Marine Engineers Beneficial association.

ROBERT A. KRUG, who for some time acted as manager of European trades with the Kerr Steamship Co., Inc., has been appointed general overseer of the Kerr lines' freight department.

OLIVER C. LONG has been made manager of European trades for the Kerr Steamship Co., Inc. He is universally known in shipping circles and for many

years he was associated with J. Bruce Ismay, on the executive staff of the White Star line.

J. J. KELLY of the B. McLean Transportation Co., New York, has been made a director of the New York Boat Owners' association.

CONRAD B. RUBERY recently was appointed works manager of the Sizer Forge Co., Buffalo. **MARSHALL C. EDMUNDS** has been appointed district manager of the Sizer company's Chicago



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CAPT. KERMIT ROOSEVELT

office which is located at 208 South La Salle street. The Chicago office is the company's sales headquarters for Wisconsin, Minnesota, Illinois, Iowa, Missouri and upper Michigan.

A. J. MARTIN is now associated with the Marine Stevedore Co., New York. Formerly he was assistant marine director at Hoboken, N. J.

E. R. RICHARDSON has been appointed federal manager of the coastwise steamship lines with offices at the Southern Pacific pier 49, New York, according to an announcement by W. T. Tyler, director of all operations of all coastwise

steamship lines. Mr. Richardson succeeds H. B. WALKER who resigned the position to resume service with the Old Dominion Steamship Co. The coastwise steamship lines include the property now under federal control consisting of the Old Dominion Steamship Co., the Ocean Steamship Co. and the Atlantic steamship lines of the Southern Pacific Steamship Co.

ROBERT E. STACKPOLE, formerly with W. R. Grace & Co., is now associated with the Kerr Steamship Co., Inc. Mr. Stackpole spent 15 months overseas with the United States naval air service during the war.

W. J. RÆBURN has become associated with Furness, Withy & Co. Formerly he was manager of the passenger department of Lloyd Brasileiro.

DONALD F. JENKS has joined the staff of Frederick A. Kirk & Co., foreign freight contractors, New York. He was previously connected with the freight department of the Pennsylvania railroad at Philadelphia.

A. MATTHEW recently became one of the owners of the Universal Shipping & Trading Co., Seattle. Mr. Matthew has been assistant general manager of the company since last October. He began his shipping career in 1906 at which time he joined the firm of Cook & Cook, agents for the American Hawaiian line. After a year in the company's Seattle offices, Mr. Cook was transferred to Tacoma, Wash., as manager of the company's branch in that city. After remaining in Tacoma for 15 months Mr. Matthew was transferred to Portland, Oreg., where he assumed the duties of department manager. Later the business was taken over by the American-Hawaiian line. Eight years ago he left the company to enter the employ of the Pacific Export Lumber Co., Portland, Oreg., and in a short time was made secretary.

ROBERT BRIDGES has resigned as port commissioner of Seattle, it was recently announced. His successor has not been named.

September Lake Levels

The United States lake survey reports the monthly mean stages of the Great Lakes for September, 1919, as follows:

Lakes	Feet above mean sea level August	September
Superior	602.59	602.55
Michigan-Huron.	581.14	580.81
St. Clair	575.92	575.61
Erie	573.14	572.75
Ontario	247.33	246.86

Lake Superior is 0.04 foot lower than last month, 0.04 foot higher than a year ago, 0.08 foot below the average stage of September of the last 10 years, 1.53 feet below the high stage of September, 1869, and 1.06 feet above the low stage of September, 1879.

Lakes Michigan-Huron are 0.33 foot lower than last month, 0.31 foot higher than a year ago, 0.14 foot above the average stage of September of the last 10 years, 2.62 feet below the high stage of September, 1876, and 1.15 feet above the low stage of September, 1911. During the last 10 years the September level has averaged 0.2 foot lower than the August level, and 0.2 foot higher than the October level.

Lake Erie is 0.39 foot lower than last month, 0.28 foot higher than a year ago, 0.38 foot above the average stage of September of the last 10 years, 1.19 feet below the high stage of September, 1876, and 1.47 feet above the low stage of September, 1895. During the last 10 years the September level has averaged 0.2 foot lower than the August level, and 0.3 foot higher than the October level.

Lake Ontario is 0.47 foot lower than last month, 0.66 foot higher than a year ago, 0.73 foot above the average stage of September of the last 10 years, 0.75 foot below the high stage of September, 1862, and 2.86 feet above the low stage of September, 1895. During the last 10 years the September level has averaged 0.4 foot lower than the August level, and 0.4 foot higher than the October level.

Soo Canal Report

During September the total number of vessels locked through the Soo was 2577. They registered 7,754,981 net tons and carried 10,202,917 tons of freight. Compared with the movement for August, when 6,609,961 net tons were handled, the figures show an increase of 3,592,956 tons. These figures indicate that the decline of shipments in August, due to the strike of ore handlers on the upper lake railroads and docks, was rapidly overcome. The movement for September, however, is the lowest for a like period since September, 1914, when the total freight carried totaled only 8,417,716 net tons.

Wheat is coming forward more freely. The September movement shows an increase of 9,693,733 bushels when compared with the amount recorded for August. Iron ore also shows a decided gain as an increase of 3,250,568 tons is shown when compared with the figures for August. Copper and stone shipments were heavier in September than in August while a falling off is shown in general merchandise and pig iron. The number of passengers recorded shows a decided decrease. In August 20,290 passengers were carried through the Soo, while in September the number dropped to 8176. The tonnage figures for the past six years follow:

	Net Tons
September, 1919	10,202,917
September, 1918	12,400,073
September, 1917	13,544,686
September, 1916	12,906,524
September, 1915	10,979,451
September, 1914	8,417,716

Of the total freight carried in September, 9,854,349 tons were handled by the United States canal while 348,568 tons passed through the Canadian canal.

The following tabulation gives the season's figures in detail for 1919 and 1918:

	EASTBOUND	
	To Oct. 1, 1919	To Oct. 1, 1918
Lumber, M feet B. M.	185,818	233,044
Flour, barrels	4,710,694	5,507,564
Wheat, bushels	66,287,216	18,702,535
Grain, bushels	35,544,656	15,667,556
Copper, net tons	40,176	64,446
Iron ore, net tons	37,385,615	47,485,028
Pig iron, net tons	3,608
Stone, net tons	44,262	10,982
Gen'l merch., net tons	49,452	47,821
Passengers, number	27,943	17,008
	WESTBOUND	
	To Oct. 1, 1919	To Oct. 1, 1918
Coal, soft, net tons	9,306,210	11,050,862
Coal, hard, net tons	1,379,206	1,262,221
Iron ore, net tons	71,863	105,138
Mfd. iron and steel, net tons	99,730	33,452
Salt, net tons	71,982	65,745
Oil, net tons	281,235	239,317
Stone, net tons	199,911	335,842
Gen'l merch., net tons	321,130	287,203
Passengers, number	28,229	17,430
SUMMARY		
Vessel passages, number	13,877	15,229
Registered tonnage, net	39,189,697	45,830,561
Freight		
Eastbound, net tons	41,155,878	49,420,991
Westbound, net tons	11,731,307	13,379,780
Total freight, net tons	53,187,935	62,800,771

Lake Erie Receipts

Out of a total of 8,178,483 tons shipped from upper lake ports in September, Lake Erie ports received 6,393,401 tons, as shown by figures compiled by THE MARINE REVIEW. The balance on dock Oct. 1 was 8,203,427 tons against 8,931,454 tons on Oct. 1, 1918. Detailed figures are:

Port	Gross tons
Buffalo and Port Colborne	830,754
Erie	231,859
Conneaut	1,046,898
Ashtabula	1,545,950
Fairport	310,036
Cleveland	1,385,256
Lorain	523,018
Huron	182,156
Toledo	264,280
Detroit	73,094
Total	6,393,401

September Ore Shipments

Shipments of iron ore showed a decided gain during September, the total amount moved being 8,178,483 tons which is a gain of 3,755,350 tons over the amount moved in August. In comparing the figures with those of September, 1918, when the movement totaled 8,995,014 tons, a decrease of 816,531 tons is shown. Total shipments to Oct. 1 are 37,776,531 tons. Compared with the figures for the corresponding period of last year, 48,329,278 tons, a decrease of 10,552,747 tons is shown.

Detailed shipments by ports are:

Port	Sept. 1919	To Oct. 1, 1919
Escanaba	939,099	3,696,996
Marquette	431,995	1,601,564
Ashland	1,190,088	4,510,176
Superior	2,033,804	8,453,318
Duluth	2,591,750	14,058,674
Two Harbors	991,749	5,455,903
Total	8,178,483	37,776,531
1919 decrease	816,531	10,552,747

War Activities of U. S. Sailing Vessels

Some interesting facts relative to the important part played by sailing vessels during the war were recently given out by A. C. Fetterolf in *The Journal of Commerce*. Mr. Fetterolf served on the chartering committee of the shipping board during the war and thus was in a position to draw some interesting conclusions.

Out of a total of 5261 charters issued during the first year of the war, 2580 were for sailing vessels. The American-built schooner was found to be a fast sailer and economically operated, and vessels of this type in many instances made the round trip voyage between New York and South American ports in less time than foreign-built square riggers. In the South American trade, the sailing vessels practically replaced steamers. Many American sailing vessels entered the African mahogany trade as during the war there was an immense demand for this wood for airplane construction.

Before the war the United States controlled a total of 1529 sailing vessels divided as follows: Seagoing, 1487; Great Lakes, 34; Philippine islands, 8. The United Kingdom, before the war, controlled 700 sailing vessels and ranked second. The United States led all other maritime nations, having to its credit 829 more sailing vessels than its nearest competitor.

The extent to which the war revived the sailing vessel is evidenced by the fact that at Cape Town in the latter part of December, 1918, 20 ocean-going windjammers lay in that port—a sight that has not been witnessed since the Boer war. The majority of these craft were schooner rigged.

Lakes Lose Prominent Leaders

**Capt. W. C. Richardson, Operator of Large Freight Fleet, and
P. H. McMillan, Head of Passenger Line, Called by Death**

CAPT. WESLEY C. RICHARDSON, dean of Great Lakes vessel managers and one of the widest known men actively connected with lake commerce, died suddenly at his home, 11309 Wade Park avenue, Cleveland, on the morning of Oct. 2. Death was due to heart failure. He remarked the previous day while at his office that he had never felt better in his life and his death came as a distinct blow to his host of friends.

Captain Richardson's long, active life serves as a monument to the success which is attained through per-

he purchased the schooner *TRANSPORT*. He sailed on this vessel as chief mate.

During 1880, Captain Richardson left the lakes to accept a position with Briggs, Hathaway & Garrison, wholesale grocers, Cleveland. His previous interest in lake commerce, however, still asserted itself and about 1895 he became a member of the firm of H. J. Webb & Co., vessel brokers and managers. Upon the death of Mr. Webb, who was the pioneer vessel broker on the Great Lakes, the firm name was changed to W. C. Richardson & Co.

Captain Richardson directed the business affairs of a number of companies of which he was the head, operating about 15 vessels. He also managed a number of other bulk freighters. He was a director and a member of the managing committee of the Lake Carriers' association, in which he always took an active interest. He also was treasurer and a member of the advisory committee of the Great Lakes Protective association.

He enjoyed the distinction of being one of the best friends vessel crews had. He looked after their interests continually. While an executive of the highest efficiency, he also possessed the ability to grasp details and to work them out satisfactorily. He seldom missed visiting his vessels on their arrival at port.

Captain Richardson in 1863 married Miss Calista M. Sykes, of Ashtabula. He is survived by his widow, a daughter, Mrs. Tracy H. Paine, a grand-daughter, Mrs. D. W. Mitchell, and a nephew, Charence E. Richardson, who is a member of the firm of W. C. Richardson & Co., Cleveland.

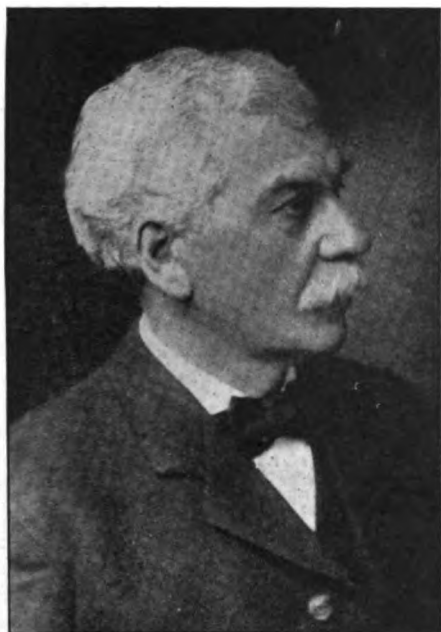
His funeral took place at his late home in Cleveland on Oct. 4. Shipping men from all branches of the trade were present, including shippers, shipbuilders, vessel owners, manufacturers, dockmen and sailors, for Captain Richardson had a host of friends.

Philip H. McMillan 1872-1919

Philip H. McMillan, president of the Detroit & Cleveland Navigation Co., died suddenly at his home at Grosse Pointe, Detroit, on Oct. 5, of heart

disease. Mr. McMillan was born in Detroit Dec. 28, 1872. He was the son of the late United States senator, William C. McMillan. He received his education at Phillips academy, Andover, Mass., and later received the degree of A. B. at Yale college, New Haven, Conn. He also studied law at the Harvard law school, Harvard university, Cambridge, Mass.

He first practiced law in New York City, 1897-1898. The following year he moved to Detroit, soon afterward becoming a member of the law firm of Wells, Angell, Boynton & McMillan. For the past few years, Mr. McMillan was



CAPT. WESLEY C. RICHARDSON

sistent effort in the face of difficulties. For more than half a century he was actively connected with Great Lakes activities. He was born in Unionville, O., June 10, 1840, of English parentage. His father was a merchant and lighthouse keeper, a fact which did much to shape the son's career.

Captain Richardson was educated in the schools at Ashtabula, O. When 16 years old he decided to become a lake sailor and shipped before the mast on a sailing vessel. Possessed of the student mind in a marked degree, he studied navigation and in 1863 he held chief mate's papers. Two years later the business ability inherited from his father asserted itself and with his brother Chauncey,



PHILIP HAMILTON McMILLAN

not actively engaged in law practice.

He was president of the Detroit & Cleveland Navigation Co., vice president of the *Detroit Free Press*, and vice president of the Packard Motor Car Co. Other business interests included connections with the Detroit Seamless Tube Co., the Michigan Malleable Iron Co., Michigan Steamship Co., Monarch Steel Casting Co., and the Pontchartrain Hotel Co. He was married in 1899 to Elizabeth Anderson, a daughter of Gen. N. L. Anderson, Washington, D. C.

Mr. McMillan was a member of the following clubs: Country, Detroit, University, Yondotega, all of Detroit; Chevy Chase and Metropolitan, of Washington; Essex Country club, Manchester, Mass., and the University and Yale clubs, of New York.

U. S. Seagoing Merchant Vessels

500 Gross Tons and Over

NAMES AND POST OFFICE ADDRESSES OF MANAGING OWNERS OF AMERICAN VESSELS WITH RIGS, NAMES, AND SIZE

Acme S. S. Corp., 11 Broadway, New York, N. Y.: St. s. James S. Whitney..... 2,615	American Cargo Transport Co. (Inc.), 170 Broadway, New York, N. Y.: Sch. Irma..... 614	Astral Shipping Co., 24 State St., New York, N. Y.: Ga. s. Asta..... 1,965
Acosta, Jose Daniel Mateo de, 60 Wall St., New York, N. Y.: Sch. Alice May Davenport..... 1,144 Sch. Charles Davenport..... 1,297	American-Hawaiian S. S. Co., 8 Bridge St., New York, N. Y.: St. s. Alaskan..... 8,617 St. s. American..... 5,650 St. s. Arizonan..... 8,723 St. s. Dakotan..... 6,660 St. s. Floridian..... 6,930 St. s. Hawaiian..... 5,670 St. s. Iowan..... 6,716 St. s. Kentuckian..... 6,582 St. s. Mexican..... 8,673 St. s. Minnesota..... 6,676 St. s. Ohioan..... 6,646 St. s. Oregonian..... 5,648 St. s. Panaman..... 6,655 St. s. Pennsylvanian..... 6,655 St. s. Texan..... 8,815 St. s. Virginian..... 7,914	Atlantic & Caribbean Steam Navigation Co., 82 Wall St., New York, N. Y.: St. s. Caracas..... 2,886 St. s. Maracaibo..... 1,771 St. s. Merida..... 628 St. s. Philadelphia..... 2,520 St. s. Zulia..... 1,713
Aiken Towboat & Barge Co., 810 Palafox St., Pensacola, Fla.: *Sch. Geo. T. Lock..... 801	Alaska Coal Transportation Co. (Inc.), Clio & Magnolia Sts., New Orleans, La.: *Sch. City of San Antonio..... 1,223	Atlantic & Pacific S. S. Co., 7 Hanover Square, New York, N. Y.: St. s. Santa Clara..... 6,462 St. s. Santa Cruz..... 4,826 St. s. Santa Olivia..... 6,421
Alaska Barge Co., 403 Perkins Bldg., Tacoma, Wash.: *Sch. Palmyra..... 1,299	Alaska Codfish Co., 10 Main St., San Francisco, Cal.: Sch. S. N. Castle..... 514	Atlantic Coast Co. (Inc.), 131 State St., Boston, Mass.: Sch. Anna Laura McKenney..... 1,021 Sch. Augusta C. Hilton..... 1,562 Sch. Bradford E. Jones..... 1,648 Sch. Ella Pierce Thurlow..... 1,505 Sch. Frances L. Taussig..... 1,080 Sch. Freeman..... 1,070 Sch. Ida S. Dow..... 1,411 Sch. Jessie G. Noyes..... 1,376 Sch. M. Vivian Pierce..... 1,511 Sch. Paul E. Thurlow..... 1,590 Sch. Sally Persis Noyes..... 1,034
Alaska Fishermans Packing Co., 225-227 Jackson St., Seattle, Wash.: Bk. W. B. Flint..... 952	Alaska Pacific Construction Co., Seattle, Wash.: Ga. s. Alabama..... 2,088	Atlantic Coast Lumber Corp., 1790 Broadway, New York, N. Y.: St. s. Aragon..... 1,450 St. s. Richmond..... 1,269
Alaska Pacific Navigation Co., Portland, Oreg.: Ga. s. Oregon..... 1,616	Alaska Packers Association, 85 Second St., San Francisco, Cal.: Shp. Bohemia..... 1,633 Bkn. Centennial..... 1,286 Shp. Indiana..... 1,487 St. s. Krichak..... 1,063 Shp. Llewellyn J. Morse..... 1,392 St. s. Nushagak..... 739 Shp. Santa Clara..... 1,535 Shp. Star of Alaska..... 1,862 Bk. Star of Chile..... 1,001 Bk. Star of England..... 2,123 Shp. Star of France..... 1,766 Shp. Star of Greenland..... 2,179 Bk. Star of Holland..... 2,121 Bk. Star of Iceland..... 2,161 Bk. Star of India..... 1,818 Shp. Star of Italy..... 1,784 Shp. Star of Lapland..... 3,381 Bk. Star of Peru..... 1,027 Shp. Star of Russia..... 1,981 Shp. Star of Scotland..... 2,598 Shp. Star of Zealand..... 3,292	Atlantic Coast Transportation Co., 11 Broadway, New York, N. Y.: *Sch. Ampere..... 698 *Sch. Camden..... 696 *Sch. Chenango..... 671 *Sch. Haverford..... 678 *Sch. Hopatcong..... 843 *Sch. Malvern..... 844 *Sch. Musconetcong..... 843 *Sch. Nay Aug..... 843 *Sch. Pohatcong..... 843 *Sch. Radnor..... 678 *Sch. Shamokin..... 829 *Sch. Shickshinny..... 836 *Sch. Stafford..... 678 *Sch. Upton..... 843
Alaska Portland Packers' Association, Yeon Bldg., Portland, Oreg.: Bk. Berlin..... 1,634 Bk. Levi G. Burgess..... 1,616	American Motor-schooner Co. (Inc.), 32 Broadway, New York, N. Y.: Ga. s. Snetind..... 1,501	Atlantic Fruit Co., 61 Broadway, New York, N. Y.: St. s. Amella..... 1,271 St. s. Annetta..... 1,336 St. s. Sagua..... 3,298 St. s. Tanamo..... 3,298 Each vessel incorporated under her own name except the Sagua which is incorporated as the Sibiria S. S. Corp. and the Tanamo as the Sarnia S. S. Corp.
Alaska S. S. Co., Fresno, Cal.: Bk. Emily F. Whitney..... 1,317	American Motorship Co. (Inc.), 32 Broadway, New York, N. Y.: Ga. s. Trollind..... 2,174	Atlantic Gulf & West Indies S. S. Lines, 11 Broadway, New York, N. Y.: St. s. Altamaha..... 2,667 St. s. Carib..... 2,118 St. s. Cauto..... 3,853 St. s. Choctaw..... 2,086 St. s. Kiowa..... 2,039 St. s. Manta..... 2,081 St. s. Ocmulgee..... 2,667 St. s. Ossabaw..... 2,667 St. s. Ozama..... 2,118 St. s. Panuco..... 3,832 St. s. Philadelphia..... 2,453 St. s. Sioux..... 2,048
Alaska S. S. Co., Colman Bldg., Seattle, Wash.: St. s. Alameda..... 3,158 St. s. Alaska..... 3,709 St. s. Cordova..... 2,273 St. s. Henry T. Scott..... 1,596 St. s. Jefferson..... 1,615 St. s. Junesau..... 2,382 St. s. Ketchikan..... 2,373 St. s. Latouche..... 2,332 St. s. Northwestern..... 3,496 St. s. Redondo..... 1,130 St. s. Santa Ana..... 1,203 St. s. Skagway..... 1,838 St. s. Valdez..... 2,382 St. s. Victoria..... 3,502	American Navigation Co., 277 Broadway, New York, N. Y.: Sch. Lewis H. Goward..... 1,181	Atlantic Maritime Co., 210 State St., Boston, Mass.: Ga. s. Edith Nute..... 985
Albers Bros. Milling Co., 332 Pine St., San Francisco, Cal.: St. s. Northland..... 1,387 St. s. Rainier..... 1,409	American S. S. Corp., 18 Broadway, New York, N. Y.: St. s. Coyote..... 2,551 St. s. Mazama..... 2,542	Atlantic Refining Co., 3144 Passyunk Ave., Philadelphia, Pa.: St. s. H. C. Folger..... 7,129 St. s. Herbert L. Pratt..... 7,145 St. s. J. C. Donnell..... 10,241 St. s. J. E. O'Neill..... 7,150 St. s. J. W. Van Dyke..... 7,197 St. s. W. M. Burton..... 7,170 St. s. W. M. Irish..... 7,169
Allen & Robinson (Ltd.), Honolulu, Hawaii: Sch. Helene..... 927 Sch. Mary E. Foster..... 950	American Transatlantic Co., 17 Battery Place, New York, N. Y.: St. s. Allaguash..... 3,826 St. s. Ausable..... 3,153 St. s. Manitowoc..... 4,471 St. s. Maumee..... 2,556 St. s. Muskegon..... 3,323 St. s. Winnebago..... 4,362 Each vessel is incorporated under its own name.	Atlantic Transport Co., 9 Broadway, New York, N. Y.: St. s. Mnichuria..... 13,638 St. s. Minnesota..... 20,602 St. s. Mongolia..... 13,638
Alpha S. S. Corp., 11 Broadway, New York, N. Y.: St. s. Tallac..... 1,380	Andes Copper Mining Co., 42 Broadway, New York, N. Y.: St. s. Potrerillos..... 1,186	Atlas Shipping Corp., Bourse Bldg., Philadelphia, Pa.: Sch. James B. Drake..... 1,153
Aluminum Company of America, 2400 Oliver Bldg., Pittsburgh, Pa.: *Sch. Hermitage..... 2,111	Andrews, Nelson, Redwood City, Cal.: St. s. Hoquiam..... 644 St. s. Tahoe..... 751	Augusta-Savannah Navigation Co., 457 Bay St., Augusta, Ga.: Ga. s. Richmond..... 568
America-Mediterranean S. S. Co. (Inc.), 5 State St., New York, N. Y.: Ga. s. Fordonian..... 2,367	Apex Navigation Corp., 63 Wall St., New York, N. Y.: Sch. Myron C. Taylor..... 1,358 Sch. Sir Thomas J. Lipton..... 1,358 Sch. William Taylor..... 1,358	
American & Cuban S. S. Line, 27 William St., New York, N. Y.: St. s. Santa Clara..... 2,584	Argonne S. S. Co., 17 Battery Place, New York, N. Y.: St. s. Argonne..... 5,754 St. s. Serpentine..... 992	
	Armour Fertilizer Works (Inc.), Union Stock Yards, Chicago, Ill.: Sch. Charles H. Macdowell..... 1,325 Sch. De Witt Brown..... 1,325	
	Arnold, Cheney & Co. (Inc.), 82 Beaver St., New York, N. Y.: Bkn. Marnie Swan..... 776	
	Associated Oil Co., Sharon Bldg., San Francisco, Cal.: Shp. Falls of Clyde..... 1,809 St. s. Frank H. Buck..... 6,076 St. s. J. A. Chanslor..... 4,938 Shp. Marion Chilcott..... 1,737 Sch. Monterey..... 1,854 Sch. Santiago..... 979 St. s. W. F. Porter..... 4,901 St. s. Wm. F. Herrin..... 4,996	
	Associated Transportation Co., Sharon Bldg., San Francisco, Cal.: St. s. Coalings..... 875	
	Astoria Vener Mills & Dock Co., Long Island City, N. Y.: Sch. Orlando V. Wooten..... 677	

St. s., steam screw—Ga. s., gas screw—Bk., bark—Bkn., barkentine—Sch., schooner—*Sch., schooner barge—Shp., ship—Slp., sloop—*Slp., sloop barge.

U. S. Seagoing Merchant Vessels

Avalon Co., Steamer, Fife Bldg., San Francisco, Cal.:		Boston & Gloucester Steamboat Co., 224 Atlantic Ave., Boston, Mass.:		St. s. William N. Page.....	5,438
St. s. Avalon.....	881	St. s. City of Gloucester.....	560	St. s. Winding Gulf.....	5,438
Backland, Ellen M., Seattle, Wash.:		Boston Molasses Co., 175 Milk St., Boston, Mass.:		Celilo S. S. Co., Fife Bldg., San Francisco, Cal.:	
Sch. C. S. Holmes.....	623	St. s. Amolco.....	3,153	St. s. Celilo.....	943
Bagdad Shipbuilding Co. (Inc.), Milton, Fla.:		Boston Sand & Gravel Co., 88 Broad St., Boston, Mass.:		Central-Hudson Steamboat Co., Pier 24, North River, New York, N. Y.:	
Sch. Bagdad.....	790	St. s. Noble Maxwell.....	578	St. s. Marlborough.....	944
Balestrand Navigation Corp., 27 William St., New York, N. Y.:		Bounds, Jessie, Moss Point, Miss.:		Central Vermont Transportation Co., Portland, Me.:	
Ga. s. Balestrand.....	2,403	Sch. Jessie Bounds.....	1,400	St. s. New London.....	2,818
Baltimore & Carolina S. S. Co. (Inc.), Union Trust Bldg., Baltimore, Md.:		Bowers Southern Dredging Co., Security Bldg., Galveston, Tex.:		St. s. New York.....	2,818
St. s. Georgeanna Weems.....	2,088	St. s. R. P. Clark.....	661	Chadwick & Co. (Inc.), C. W., 11 Broadway, New York, N. Y.:	
St. s. Matilda Weems.....	1,322	Boyce Navigation Corp., 29 Broadway, New York, N. Y.:		*Sch. Devon.....	724
St. s. Sarah Weems.....	1,521	Sch. Judge Boyce.....	698	*Sch. Forest Belle.....	1,333
Baltimore, Chesapeake & Atlantic Ry. Co., Pier 1, Baltimore, Md.:		Broad Transport Corp., 60 Broad St., New York, N. Y.:		*Sch. Oxford.....	836
St. s. Cambridge.....	834	Sch. Anna R. Heldritter.....	694	Chesapeake & Ohio Ry. Co., foot of 23rd St., Virginia.....	635
St. s. Plunkatank.....	899	Brookings Commercial Co., Brookings, Ore.:		Chesapeake S. S. Co., Light & German Sts., Baltimore, Md.:	
St. s. Tred Avon.....	676	St. s. Frank D. Stout.....	1,113	St. s. Columbia.....	2,021
Baltimore Steam Packet Co., Pier 10, Light St., Baltimore, Md.:		St. s. Necanicum.....	752	Chile S. S. Co. (Inc.), 120 Broadway, New York, N. Y.:	
St. s. Florida.....	2,185	Broughton & Wiggins Navigation Co., 909-910 Yeon Bldg., Portland, Ore.:		St. s. Republic.....	4,169
St. s. Gaston.....	846	St. s. Ernest H. Meyer.....	1,057	China Mail S. S. Corp., Sacramento and Montgomery Sts., San Francisco, Cal.:	
St. s. Raleigh.....	1,185	Brunswick Shipbuilding Co., Brunswick, Ga.:		St. s. China.....	5,060
Bangor-Brewer Shipbuilding Co. (Inc.), Brewer, Me.:		Sch. Eleanor Taylor.....	705	St. s. Nanking.....	8,263
Sch. Charles D. Stanford.....	714	Buehner Lumber Co., Coos Bay, Ore.:		Chiquimula Ship Corp., 17 Battery Place, New York, N. Y.:	
Barber & Co., 17 Battery Place, New York, N. Y.:		St. s. Martha Buehner.....	774	Ga. s. Chiquimula.....	700
St. s. Dochra.....	4,309	Bull-Insular S. S. Co., 17 Battery Place, New York, N. Y.:		City Mill Co. (Ltd.), 918 Kekaulike St., Honolulu, Hawaii:	
St. s. Macona.....	5,311	St. s. Cornelia.....	3,216	Sch. Columbia.....	663
St. s. Satsuma.....	4,204	St. s. Helen.....	3,216	City of Beaumont Ship Co., Orange, Tex.:	
St. s. Suruga.....	4,374	St. s. Marina.....	1,151	Ga. s. City of Beaumont.....	2,014
The Dochra is incorporated as the La Plata S. S. Co., the Satsuma and the Suruga as the New York & Oriental S. S. Co., and the Macona under her own name.		St. s. Moldegaard.....	2,852	City of Galveston Ship Co. (Inc.), Orange, Tex.:	
Barbour Shipping Corp. (Inc.), Adelaide, 2 Rector St., New York, N. Y.:		Bull S. S. Co., A. H., 17 Battery Place, New York, N. Y.:		Ga. s. City of Galveston.....	2,259
Sch. Adelaide Barbour.....	1,336	St. s. Beatrice.....	3,450	City of Pascagoula Ship Co., Gulfport, Miss.:	
Barnes, Charles H., Saugus, Mass.:		St. s. Carolyn.....	3,219	Ga. s. City of Pascagoula.....	2,354
Sch. Laura A. Barnes.....	629	St. s. Clare.....	3,455	City of Portland Motorship Co. (Inc.), Portland, Ore.:	
Barnstable Co., 29 Broadway, New York, N. Y.:		St. s. Dorothy.....	2,214	Ga. s. City of Portland.....	1,833
*Sch. Arenac.....	512	St. s. Edith.....	3,527	City of Puebla Corp., 17 Battery Place, New York, N. Y.:	
*Sch. Barnstable.....	1,210	St. s. Evelyn.....	3,140	St. s. City of Puebla.....	2,980
Barrenechea, S. de, 128 Pearl St., New York, N. Y.:		St. s. Hilton.....	3,102	Clark, Eleazer W., 135 Commercial St., Portland, Me.:	
Sch. Rebecca Palmer.....	2,556	St. s. Jean.....	3,125	Sch. George E. Walcott.....	1,563
Barry, Carlos, Union Bank, New London, Conn.:		St. s. Margaret.....	3,372	Sch. James W. Elwell.....	1,192
Sch. Charles H. Klinck.....	522	St. s. Millinocket.....	3,336	Clinchfield Navigation Co. (Inc.), 24 Broad St., New York, N. Y.:	
Sch. George E. Klinck.....	560	St. s. Ruth.....	3,102	Sch. Edward R. Smith.....	565
Sch. William Booth.....	545	Burns-Philip Co., Merchants Exchange, San Francisco, Cal.:		Clyde S. S. Co., Pier 36, North River, New York, N. Y.:	
Barter, Theresa J., 67 Chestnut St., Waltham, Mass.:		Sch. Annie M. Campbell.....	565	St. s. Algonquin.....	2,832
Sch. Waltham.....	533	Sch. Eric.....	574	St. s. Apache.....	4,145
Battery S. S. Corp., 17 Battery Place, New York, N. Y.:		Sch. John A. Campbell.....	545	St. s. Arapahoe.....	4,145
St. s. Borinquen.....	2,551	Sch. Lottie Bennett.....	566	St. s. Cherokee.....	2,558
Baxter S. S. Co., Fred, Merchants Exchange, San Francisco, Cal.:		Sch. Wm. H. Smith.....	566	St. s. Chippewa.....	2,698
St. s. Fred Baxter.....	1,294	Butler Steamer Co., Jim, 112 Market St., San Francisco, Cal.:		St. s. Comanche.....	3,858
Baxter S. S. Co., Horace X., Merchants Exchange, San Francisco, Cal.:		St. s. Jim Butler.....	642	St. s. Delaware.....	1,907
St. s. Horace X. Baxter.....	1,293	Cambridge Gas Light Co., 719 Massachusetts Ave., Cambridge, Mass.:		St. s. George W. Clyde.....	1,848
Bee S. S. Co., 110 Market St., San Francisco, Cal.:		*Sch. Henry Endicott.....	866	St. s. Huron.....	3,318
St. s. Bee.....	662	Caoba Corp., 220 Eleventh Ave., New York, N. Y.:		St. s. Inca.....	1,414
Behn Bros. (Inc.), 30 Tanca St., San Juan, P. R.:		St. s. Caoba.....	683	St. s. Iroquois.....	3,601
Sch. Cecilia M. Dunlap.....	835	Cape Cod S. S. Co., 131 State St., Boston, Mass.:		St. s. Katsadin.....	2,696
Biddeford Shipbuilding Co., Biddeford, Me.:		St. s. Dorothy Bradford.....	1,746	St. s. Lenape.....	5,179
Sch. Jere G. Shaw.....	739	Carib S. S. Co. (Inc.), 21 State St., New York, N. Y.:		St. s. Mohawk.....	4,623
Billings, George E., 310 California St., San Francisco, Cal.:		St. s. Carib.....	3,075	St. s. Mohican.....	2,255
Sch. George E. Billings.....	1,260	Carloca Co. (Inc.), 307 Whitney Bank Bldg., New Orleans, La.:		St. s. New York.....	2,589
Sch. H. K. Hall.....	1,237	Bkn. Carloca.....	762	St. s. Norfolk.....	2,453
Sch. Inca.....	1,014	Carmen Ship Co., Wilcox Bldg., Portland, Ore.:		St. s. Pawnee.....	1,907
Bkn. James Tuft.....	1,274	Ga. s. Carmen.....	1,610	St. s. Yaque.....	1,414
Sch. W. H. Talbot.....	816	Carroll, Caroline S., Cortland Street Piers, New York, N. Y.:		Coast Transit Co., 17 Battery Place, New York, N. Y.:	
Sch. Wm. Bowden.....	778	St. s. Haven.....	930	*Sch. I. D. Fletcher.....	1,084
Blue Peter Navigation Corp., 29 Broadway, New York, N. Y.:		St. s. York.....	1,152	Coastwise S. S. & Barge Co., 503 Burke Bldg., Seattle, Wash.:	
Sch. Blue Peter.....	1,234	Carver, Amos D., 39 Water St., New York, N. Y.:		St. s. Anyox.....	1,287
Boggs, Francis G., 31 Commercial St., Boston, Mass.:		Sch. Nancy Hanks.....	1,162	*Sch. Henry Villard.....	1,552
Sch. Annie C. Ross.....	791	Sch. Virginia Dare.....	1,569	Bk. Louisiana.....	1,436
Sch. George D. Edmonds.....	541	Carver, Eugene P., 110 State St., Boston, Mass.:		Coastwise Transportation Co., 40 Central St., Boston, Mass.:	
Booth Fisheries Co. (Inc.), foot of Wall St., Seattle, Wash.:		Shp. Aryan.....	2,123	St. s. Bristol.....	3,271
Shp. Benj. F. Packard.....	2,156	Caspar Lumber Co., 807-812 Kohl Bldg., San Francisco, Cal.:		St. s. Coastwise.....	4,015
Shp. Charles E. Moody.....	2,063	St. s. Caspar.....	648	St. s. Fairmont.....	5,000
Bk. Guy C. Goss.....	1,572	St. s. Lakme.....	529	St. s. Franklin.....	5,268
*Sch. J. D. Peters.....	1,085	Castner, Curran & Bullitt, (Inc.), 40 Central St., Boston, Mass.:		St. s. Hampden.....	4,725
Shp. St. Paul.....	1,893	St. s. Corsica.....	2,364	Sch. Henry W. Cramp.....	1,629
Border Line Transportation Co., 1144 Henry Bldg., Seattle, Wash.:		St. s. Harvey H. Brown.....	2,673	St. s. Middlesex.....	4,727
St. s. Fulton.....	605	St. s. Selwyn Eddy.....	2,846	St. s. Norfolk.....	3,521
		Castner, Curran & Bullitt (Inc.), 1 Broadway, New York, N. Y.:		St. s. Suffolk.....	4,718
		St. s. Deepwater.....	7,610	St. s. Transportation.....	4,015
		St. s. Glen White.....	5,438	Cohen, Milton S., 334 Fourth Ave., New York, N. Y.:	
		St. s. Sewalls Point.....	5,431	St. s. Binghamton.....	2,143

U. S. Seagoing Merchant Vessels

Colombian Maritime Co. (Ltd.), 17 State St., New York, N. Y.: St. s. Balboa..... 615	Day, J. J., Seaford, Del.: Sch. G. J. Cheery..... 533	Elliot, Richard O., Thomaston, Me.: Sch. Margaret Throop..... 1,264
Colonial Navigation Co., Pier 39, North River, New York, N. Y.: St. s. Brockton..... 1,297	Decrow, Israel K., 91 Broad St., Boston, Mass.: Sch. Estelle Krieger..... 1,172	Else Shipping Co., Wilcox Bldg., Portland, Oreg.: Sch. Elze..... 814
Columbia River Packers Association, Eighth St., Astoria, Oreg.: Shp. Reuce..... 1,924 Shp. St. Nicholas..... 1,798	Deering, Gardiner G., 726 Washington St., Bath, Me.: Sch. Gardiner G. Deering..... 1,982 Sch. Mary F. Barrett..... 1,833 Sch. Mary L. Baxter..... 1,036	Elwell & Co., James W., 17 State St., New York, N. Y.: St. s. Evangeline..... 3,798
Consolidation Coastwise Co., 40 Central St., Boston, Mass.: St. s. Inland..... 1,888 *Sch. Number Five..... 909 *Sch. Number Seven..... 898 *Sch. Number Ten..... 897 *Sch. Number Fourteen..... 927 *Sch. Number Fifteen..... 912 *Sch. Number Seventeen..... 935 *Sch. Number Eighteen..... 936 *Sch. Number Nineteen..... 932 *Sch. Number Twenty..... 940 *Sch. Number Twenty-one..... 905 *Sch. Number Twenty-three..... 1,035 *Sch. Number Twenty-four..... 1,566 *Sch. Number Twenty-five..... 1,566	Deering Co., G. G., 726 Washington St., Bath, Me.: Sch. Carroll A. Deering..... 2,114 Sch. Courtney C. Houck..... 1,627 Sch. Frank M. Deering..... 1,891 Sch. Harry C. Deering..... 1,342 Sch. Lydia McLellan Baxter..... 1,352 Sch. Maude M. Mosey..... 1,364	Elzey, George W., Laurel, Del.: Sch. George W. Elzey..... 690
Cook, H. W., 437 Chestnut St., Philadelphia, Pa.: *Sch. North East..... 1,069 *Sch. South Land..... 863 *Sch. Tottenville..... 643 *Sch. Westland..... 889 *Sch. Wm. J. Lermond..... 887	Denechaud, Charles L., Canal Bank Bldg., New Orleans, La.: Sch. Rosemary..... 901	Emery, Ralph C., 114 State St., Boston, Mass.: Sch. Calumet..... 1,241 Sch. Eleanor F. Bartram..... 1,114 Bkn. John S. Emery..... 919 Sch. Kenwood..... 929 Sch. Tifton..... 594
Coos Bay Lumber Co., Oakland, Cal.: St. s. C. A. Smith..... 1,878 St. s. Johanna Smith..... 1,921	Denechaud, J. F., 3229 Napoleon Ave., New Orleans, La.: Sch. Joseph Leopold..... 663	Erickson Navigation Co. (Inc.), 25 Beazer St., New York, N. Y.: Sch. Alexander H. Erickson..... 970
Corry, J. W., Henma Bldg., New Orleans, La.: Sch. Frederic A. Duggan..... 1,137	Dimon, C. L., 32 Broadway, New York, N. Y.: St. s. Maple..... 1,098	Erle Land & Improvement Co., 50 Church St., New York, N. Y.: *Sch. Maywood..... 915 *Sch. Wechawken..... 751
Cosmopolitan Shipping Co. (Inc.), 115 Broadway, New York, N. Y.: Shp. Brynhilda..... 1,502 Sch. Rostellan..... 999	Dirla Ship Corp., 17 Battery Place, New York, N. Y.: Ga. s. Dirla..... 1,481	Eriss Motor Ship Co., Wilcox Bldg., Portland, Oreg.: Ga. s. Eriss..... 1,582
Cox's Towing Line (Inc.), 90 West St., New York, N. Y.: Sch. Azua..... 664	Dollar S. S. Line, 230 California St., San Francisco, Cal.: St. s. Stanley Dollar..... 3,392	Eschen & Minor Co. (Inc.), 24 California St., San Francisco, Cal.: Bkn. Georgina..... 998 Sch. H. D. Bendixsen..... 641
Crockett S. S. Co., 110 Market St., San Francisco, Cal.: St. s. Cricket..... 1,136	Dollar Co., Robert, 230 California St., San Francisco, Cal.: Shp. Dunsyre..... 2,149 Shp. John Ena..... 2,842	Esckridge, John R., Seaford, Del.: Sch. George W. Trullitt, Jr..... 779
Crosby, E. S., 48 Front St., Bath, Me.: Sch. John B. Biemiller..... 1,077	Dollar, R. Stanley, San Francisco, Cal.: Bkn. Jane L. Stanford..... 970	Esperanza Motor Ship Co., 504 Wilcox Bldg., Portland, Oreg.: Ga. s. Esperanza..... 1,601
Crosby Transportation Co., 7 Bridge St., Milwaukee, Wis.: St. s. E. G. Crosby..... 1,821	Donald S. S. Co. (Inc.), 17 Battery Place, New York, N. Y.: Ga. s. Marie de Ronde..... 2,415	Evelyn Motorship Co. (Inc.), 17 Battery Place, New York, N. Y.: Ga. s. Evelyn..... 1,584
Crowell & Thurlow S. S. Co., 131 State St., Boston, Mass.: Sch. A. Ernest Mills..... 946 St. s. Edward Peirce..... 4,387 St. s. Felix Taussig..... 6,253 Sch. Gladys M. Taylor..... 967 St. s. Lewis K. Thurlow..... 3,316 St. s. Peter H. Crowell..... 3,101 St. s. Stephen R. Jones..... 4,337	Donovan S. S. Co., Hobart Bldg., San Francisco, Cal.: St. s. Carlos..... 865	F. I. A. T., 501 Fifth Ave., New York, N. Y.: St. s. Susana..... 3,710
Crowell & Thurlow S. S. Co., 131 State St., Boston, Mass.—Con. St. s. Tampico..... 2,261 St. s. Walter D. Noyes..... 4,387 St. s. William A. McKenney..... 6,256	Dougherty Co., P. Gay and Lombard Sts., Baltimore, Md.: *Sch. Annapolis..... 1,371 *Sch. Baltimore..... 1,307 *Sch. Delaware..... 1,371 *Sch. Maine..... 1,110 *Sch. Maryland..... 1,371 *Sch. Monocacy..... 973 *Sch. Montauk..... 1,371 *Sch. Nanticoke..... 771 *Sch. Potomac..... 823 *Sch. Providence..... 1,371 *Sch. Severn..... 780 *Sch. Wilmington..... 1,371 *Sch. Worcester..... 625	Fairhaven Co., 112 Market St., San Francisco, Cal.: St. s. Fairhaven..... 1,087
Crowley, Thomas, Howard Street Wharf, San Francisco, Cal.: Sch. Crowley..... 1,364 St. s. Geo. W. Elder..... 1,762 Bk. Olympic..... 1,469	Dunn and Elliot Co., Thomaston, Me.: Bkn. Cecil P. Stewart..... 1,216	Falketind Ship Co., 1214 Merchants Exchange, San Francisco, Cal.: Sch. Falketind..... 2,101
Cuba Distilling Co., 27 William St., New York, N. Y.: St. s. Cubadist..... 5,788 St. s. Melero..... 5,853 St. s. Nelson..... 4,746 St. s. Suerosa..... 5,788	Dwinnell, W. S., 1217 Plymouth Bldg., Minneapolis, Minn.: Bkn. Cornado..... 1,058	Fanstrand Navigation Corp., New York, N. Y.: Ga. s. Fanstrand..... 2,557
Cummer, A. G., 1018 Riverside Ave., Jacksonville, Fla.: *Sch. South East..... 869	East Coast Ship Co., 20 Central Road, Somerville, Mass.: Sch. Marguerite M. Wemyss..... 582	Federal Operating Co., 78 Broad St., New York, N. Y.: St. s. Neptune..... 1,352
Cummins, Albert D., 127 Walnut St., Philadelphia, Pa.: Sch. William C. May..... 710	East Coast Transportation Corp., 17 Battery Place, New York, N. Y.: Sch. Dunham Wheeler..... 1,926 Sch. Florence Howard..... 863 Sch. Hauppauge..... 1,394 Sch. Melbourn P. Smith..... 650 Sch. Priscilla L. Ray..... 712	Fife Shipping Co. (Inc.), 330 California St., San Francisco, Cal.: Sch. Camano..... 730 Sch. Columbia River..... 1,200 Sch. Gamble..... 726 Sch. Irmgard..... 670 Sch. Okanogan..... 721 Sch. Sophie Christenson..... 675 Sch. Snokane..... 639 Sch. Thistle..... 1,586
Cummins & Co., A. D., 127 Walnut St., Philadelphia, Pa.: Sch. Francis J. McDonald..... 1,059	Eastern S. S. Lines (Inc.), India Wharf, Boston, Mass.: St. s. Belfast..... 2,157 St. s. Calvin Austin..... 3,826 St. s. Camden..... 2,153 St. s. Governor Cobb..... 2,522 St. s. Governor Dingley..... 3,826 St. s. H. F. Dimock..... 2,625 St. s. Herman Winter..... 2,625 St. s. North Land..... 3,282 St. s. North Star..... 3,159	Florida East Coast Car Ferry Co., 28 Broadway, New York, N. Y.: St. s. Henry M. Flagler..... 2,699 St. s. Joseph R. Parrott..... 2,406
Cyclades Transportation Co., 44 Whitehall St., New York, N. Y.: Sch. Northland..... 2,047	Eastern Transportation Co., Ford Bldg., Wilmington, Del.: *Sch. A. H. Olwine..... 1,077 *Sch. E. R. Haggett..... 696 *Sch. Eugenia Hooper..... 730 *Sch. Larry F. Hooper..... 836 *Sch. James M. Hudson..... 1,011 *Sch. John H. Winstead..... 841 *Sch. Joseph J. Hock..... 1,032 *Sch. R. W. Macdonald..... 630 *Sch. Sweetser Linthicum..... 695 *Sch. T. J. Hooper..... 722	Fontaine Navigation Co., 29 Broadway, New York, N. Y.: Sch. John R. Fox..... 741
D. C. Navigation Corp., 29 Broadway, New York, N. Y.: Ga. s. David Cohen..... 754	East Jersey R. R. & Terminal Co., 11 Broadway, New York, N. Y.: *Sch. Tydol..... 513	France & Canada S. S. Corp., 120 Broadway, New York, N. Y.: Sch. Camilla May Page..... 688 Sch. Cora F. Cressy..... 2,499 Sch. Dorothy Palmer..... 2,872 Sch. Governor Brooks..... 2,628 Sch. Jane Palmer..... 3,138 Sch. Martha P. Small..... 2,178 Sch. Oakley C. Curtis..... 2,374 Sch. Sineleton Palmer..... 2,859 Sch. Wyoming..... 3,730
Dagsland, G. H., 570 West 172d St., New York, N. Y.: Sch. Salisbury..... 597	Elliot, George 2 Elliot St., Thomaston, Me.: Sch. Republic..... 801	Freeman, R. R., 131 State St., Boston, Mass.: Sch. Orleans..... 751
Daisy S. S. Co., Fife Bldg., San Francisco, Cal.: St. s. Daisy..... 679		Freeport Sulphur Transportation Co., 61 Broadway, New York, N. Y.: St. s. Freeport Sulphur No. 1..... 2,588
Davenport Co., Steamer, 112 Market St., San Francisco, Cal.: St. s. Davenport..... 911		Freighters Ship Construction Co. (Inc.), 29 Broadway, New York, N. Y.: Sch. Mohawk..... 913
		French-American Line (Inc.), 18 Broadway, New York, N. Y.: Sch. Eagle Wing..... 1,232 Sch. Mary E. Palmer..... 1,526 St. s. Red Cloud..... 2,474
		French Over-Seas Corp., 120 Broadway, New York, N. Y.: Sch. Edward J. Lawrence..... 3,350
		Gadsby S. S. Co., Daisy, 1 Drumm St., San Francisco, Cal.: St. s. Daisy Gadsby..... 818

U. S. Seagoing Merchant Vessels

Gardiner Mill Co. (Inc.), 16 California St., San Francisco, Cal.:		St. s. Gulfland	5,276	Jerome, James, 1 Drumm St., San Fran- cisco, Cal.:	
Sch. Alvena	772	St. s. Gulfight	5,188	Sch. Forest Home	762
Sch. Caroline	511	St. s. Gulfmaid	5,225	St. s. Humboldt	1,075
Sch. Irene	772	St. s. Gulfoll	5,188	St. s. La Primera	1,083
Sch. King Cyrus	717	St. s. Gulfqueen	6,795	St. s. Mayfair	670
Gardner Williams Shipping Co. (Inc.), American National Bank Bldg., San Francisco, Cal.:		St. s. Gulfstream	5,188	Sch. Planter	524
Sch. The Gardner Williams	920	St. s. J. M. Guffey	2,520	Sch. William E. Burnham	772
Garland S. S. Corp., 511 Fifth Ave., New York, N. Y.:		*Sch. Junlata	1,432	Juell Transportation Corp., 27 William St., New York, N. Y.:	
St. s. Carolinian	4,170	St. s. Larimer	3,737	Bkn. Amos Pegs	685
St. s. Grayson	2,607	*Sch. Monongahela	1,677	Kanabec S. S. Co. (Inc.), 18 Broadway, New York, N. Y.:	
St. s. Javary	1,249	*Sch. Shenango	2,365	St. s. Kanabec	2,474
St. s. Justin	2,321	*Sch. Susquehanna	1,381	Katia S. S. Corp., 31 Pine St., New York, N. Y.:	
St. s. Norlina	4,596	St. s. Trinidadian	2,450	St. s. Katia	2,239
Gaston, Williams & Wigmore S. S. Corp., 39 Broadway, New York, N. Y.:		St. s. Winifred	2,551	Kendall, Clarence M., 81 Fulton St., New York, N. Y.:	
Sch. Clara A. Donnell	1,177	Hall, Irving G., Somerville, Mass.:		Bk. Independence	953
Sch. Henry F. Kreger	1,250	Bk. Belmont	1,528	Kennedy, Lawrence J., 37 Wall St., New York, N. Y.:	
Ga. s. Mount Hood	2,909	Hammond Lumber Co., 260 California St., San Francisco, Cal.:		Sch. Elisha Atkins	1,259
Ga. s. Mount Baker	2,904	St. s. Flavel	967	Kennerley, William J., Stop, 3, Santurce, San Juan, P. R.:	
Ga. s. Mount Rainier	2,397	St. s. Halco	970	Sch. Charles E. Dunlap	1,609
Ga. s. Santino	2,491	St. s. Santiam	946	Kerr Navigation Corp., 21 State St., New York, N. Y.:	
General Lighterage Co., 25 Broadway, New York, N. Y.:		Hanify Co., J. R., 24 Market St., San Francisco, Cal.:		St. s. Keresan	3,725
*Sch. Vitric	765	St. s. Santa Barbara	695	St. s. Keresaspa	4,636
General Navigation Co., 120 Broadway, New York, N. Y.:		Harriss, Robert M., 15 William St., New York, N. Y.:		St. s. Kerkenna	3,621
Sch. Alice M. Colburn	1,603	St. s. Mackinac	512	St. s. Kerlew	3,562
General Petroleum Co., 310 Sansome St., San Francisco, Cal.:		Hartford & New York Transportation Co., 285 State St., Hartford, Conn.:		St. s. Kermanshah	4,947
Bk. Diamond Head	1,012	St. s. Seaboard	662	St. s. Kermoor	4,795
Georgia Shipbuilding Co., Bonnard and River Sts., Savannah, Ga.:		Hartwood Co., Steamer, 1 Drumm St., San Francisco, Cal.:		St. s. Kerowlee	3,550
Sch. Irene S. Wilkinson	818	St. s. Hartwood	946	St. s. Kerwood	3,651
Sch. Margaret Spencer	818	Havre, J. B., 1436 Euclid Ave., Berkeley, Cal.:		King Transportation Co., J. B., 17 State St., New York, N. Y.:	
Sch. Rosalie Hull	826	Sch. Katherine	2,205	*Sch. Lewis H. St. John	1,741
Sch. Sally Wren	863	Hawaii Co., Barkentine, 230 California St., San Francisco, Cal.:		*Sch. Samuel W. Fancher	1,972
Gilbert, O. A., Mystic, Conn.:		Bkn. Hawaii	1,085	Kinn Limited (Inc.), 15 William St., New York, N. Y.:	
St. s. Wallula	1,924	Hays, T. A., Mills Bldg., San Francisco, Cal.:		Sch. Edith	1,263
Gilmartin, Daniel F., 77 Broad St., New York, N. Y.:		*Sch. Erskine M. Phelps	3,029	Sch. Eleanor A. Percy	3,401
Sch. Esther Ann	753	St. s. Whittier	1,295	Kissock, William M., 48 Devon Road, Brookline, Mass.:	
Sch. Wilbert S. Bartlett	741	Hibbard Stewart Co., 1210 Western Ave., Seattle, Wash.:		Sch. Rhine	1,690
Gilmartin & Trundy, 77 Broad St., New York, N. Y.:		Ga. s. Belvedere	523	Klamath S. S. Co., Fife Bldg., San Fran- cisco, Cal.:	
Sch. Charlotte A. Maxwell	668	Higgins, Charles H., 2825 Webster St., Berkeley, Cal.:		St. s. Klamath	1,083
Sch. Florence B. Phillips	671	St. s. Fort Bragg	912	Knowles, H. J., 260 California St., San Francisco, Cal.:	
Grace S. S. Co., 7 Hanover Square, New York, N. Y.:		Hind, George U., 230 California St., San Francisco, Cal.:		Bkn. Thrasher	515
St. s. Cacique	6,202	Bkn. Conqueror	1,395	Knox, William H., Old Slip and Water St., New York, N. Y.:	
St. s. Colusa	6,003	Sch. Muriel	536	Bk. Callao	1,014
St. s. Santa Alicia	2,244	Sch. Robert R. Hind	564	Knox & Co. (Inc.) William H., 18 Old Slip, New York, N. Y.:	
St. s. Santa Ana	4,942	Holden Evans S. S. Co., 60 Wall St., New York, N. Y.:		Sch. Friend Ship	686
St. s. Santa Barbara	6,621	Ga. s. Holden Evans	3,253	Kohala Co., Barkentine, 230 California St., San Francisco, Cal.:	
Ga. s. Santa Elena	1,923	Holding, M. L. C., 149 Broadway, New York, N. Y.:		Bkn. Kohala	891
Ga. s. Santa Flavia	2,113	Bkn. John C. Meyer	932	Kroll, Clifton H., 311 California St., San Francisco, Cal.:	
Ga. s. Santa Inez	1,742	Hollywood S. S. Corp., 33 Pine St., New York, N. Y.:		Sch. Andy Mahony	566
Ga. s. Santa Isabel	1,919	St. s. Hollywood	1,940	Ga. s. Palawan	818
St. s. Santa Luisa	4,944	Huasteca Petroleum Co., 1015 Security Bldg., Los Angeles, Cal.:		Kruse, Emil T., 24 California St., San Francisco, Cal.:	
St. s. Santa Paula	6,415	St. s. Catania	3,347	St. s. Helene	672
St. s. Santa Rita	1,600	Hunter, W. N., cor. St. Francis and Royal Streets, Mobile, Ala.:		Lackawanna S. S. Co. (Inc.), 17 Battery Pl., New York, N. Y.:	
St. s. Santa Rosa	6,415	Sch. Jean L. Somerville	749	St. s. Luckawanna	1,988
Gratia Navigation Co. (Inc.), 18 Broad- way, New York, N. Y.:		Huron Navigation Corp., 115 Broadway, New York, N. Y.:		Lafayette Shipping Corp., 11 Broadway, New York, N. Y.:	
Bk. Gratia	1,582	St. s. William O'Brien	5,211	Ga. s. City of St. Helens	2,135
Greenebaum, Alfred, 10 Main St., San Francisco, Cal.:		Iceland Trading Co. (Inc.), 44 Broad St., New York, N. Y.:		Lahaina Co., Barkentine, 230 California St., San Francisco, Cal.:	
Sch. Bangor	511	St. s. Francis Hyde	739	Bkn. Lahaina	1,067
Great Northwestern Shipping Corp., 20 Broad St., New York, N. Y.:		Indiana S. S. Co., Michigan City, Ind.:		Lassell S. S. Co. (Inc.), 17 State St., New York, N. Y.:	
St. s. Cote Blanche	2,351	St. s. Black Rock	1,997	St. s. Lassell	1,972
Great Northern Paper Co., 60 Congress St., Boston, Mass.:		Insley, George B., Bethel, Del.:		Lehigh & Wilkes-Barre Coal Co. (Inc.), 143 Liberty St., New York, N. Y.:	
St. s. Rhipogonus	2,278	*Sch. William T. Lank	598	*Sch. L. & W.-B. C. Co. No. 1	852
Greig, James, Alameda, Cal.:		Inter-Island Steam Navigation Co., Queen St., Honolulu, Hawaii:		*Sch. L. & W.-B. C. Co. No. 2	958
St. s. San Pedro	724	St. s. Claudine	846	*Sch. L. & W.-B. C. Co. No. 3	852
Guanacaste Ship Corp., 7 West Seventh St., Wilmington, Del.:		St. s. Helene	618	*Sch. L. & W.-B. C. Co. No. 4	685
Ga. s. Guanacaste	632	St. s. Kilauwa	1,338	*Sch. L. & W.-B. C. Co. No. 5	685
Gulf & Southern S. S. Co., Jacksonville, Fla.:		St. s. Kinua	975	*Sch. L. & W.-B. C. Co. No. 6	685
St. s. W. M. Tupper	1,852	St. s. Mauna Kea	1,566	*Sch. L. & W.-B. C. Co. No. 7	685
Gulf Export & Transportation Co. (Inc.), Beaumont, Tex.:		St. s. Mauna Loa	850	*Sch. L. & W.-B. C. Co. No. 8	953
St. s. Col. Bowie	1,363	St. s. Onomea	736	*Sch. L. & W.-B. C. Co. No. 9	685
*Sch. Col. Keith	884	International Mercantile Marine Co., 9 Broadway, New York, N. Y.:		*Sch. L. & W.-B. C. Co. No. 10	862
Gulf Mail S. S. Co., 1 Drumm St., San Francisco, Cal.:		St. s. Finland	12,222	*Sch. L. & W.-B. C. Co. No. 11	862
St. s. Alliance	916	St. s. Kronland	12,241	*Sch. L. & W.-B. C. Co. No. 14	953
Gulf Navigation Co. (Inc.), 514 Whitney Bldg., New Orleans, La.:		St. s. New York	10,080	*Sch. L. & W.-B. C. Co. No. 15	955
Ga. s. Nola	595	St. s. Philadelphia	10,232	*Sch. Wilkesbarre	1,678
Gulf Refining Co., West Seventh St., Port Arthur, Tex.:		St. s. St. Louis	10,230	Lehigh Coal & Navigation Co. (Inc.), 143 Liberty St., New York, N. Y.:	
*Sch. Conemaugh	1,774	St. s. St. Paul	10,230	*Sch. Coldale	831
*Sch. Conneaut	1,690	Jason Navigation Corp., 21 State St., New York, N. Y.:		Lehigh Coal & Navigation Co. (Inc.), 143 Liberty St., New York, N. Y.—Contd.	
St. s. Currier	4,711	St. s. Jason	2,581	*Sch. Easton	830
St. s. Gulf of Mexico	7,807				
St. s. Gulfcoast	5,188				

U. S. Seagoing Merchant Vessels

*Sch. Greenwood	967	Maine Central R. R. Co., Union Station, Portland, Me.:	652	Middleton, Clifford L., 68 Broad St., New York, N. Y.:	518
*Sch. Hauto	830	St. s. Rangeley		Sch. Persis A. Colwell.....	
*Sch. Nesquehoning	967	Maine Coast Co., Belfast, Me.:	535	Mildred Motorship Corp., 32 Broadway, New York, N. Y.:	829
*Sch. Rahn	932	St. s. Mohawk		Ga. s. Mildred	
*Sch. Tamaqua	830	Makewell Co., Barkentine, 230 California St., San Francisco, Cal.:	899	Miller, Alfred J., 17 Exchange Place, Providence, R. I.:	620
Lehigh Valley Transportation Co. (Inc.), New Brunswick Ave., Perth Amboy, N. J.:		Bkn. Makewell		Sch. Jacksonville	
St. s. Coxton	548	Mallory S. S. Co., Pier 36, North River, New York, N. Y.:	2,842	Miller, Arthur A., 37 Wall St., New York, N. Y.:	858
St. s. Manchester	582	St. s. Alamo	2,934	Sch. Charles G. Endicott.....	1,220
*Sch. 700	934	St. s. Comal	3,724	Bkn. Herdis	2,029
*Sch. 701	934	St. s. Concho	6,063	St. s. Minneapolis	2,426
*Sch. 702	934	St. s. Henry R. Mallory.....	2,942	St. s. Vigo	
*Sch. 704	934	St. s. Lampasas	5,426	Minguell Shipping Corp., 604 American National Bank Bldg., Pensacola, Fla.:	730
*Sch. 705	934	St. s. Medina	3,367	Sch. Goldfield	
*Sch. 706	934	St. s. Nueces	2,556	Minnehaha Motorschooner Co. (Inc.), 17 Battery Place, New York, N. Y.:	2,176
*Sch. 707	934	St. s. Rio Grande.....	3,328	Sch. Bright	2,151
*Sch. 741	680	St. s. Sabine	6,069	Ga. s. Brisk	
*Sch. 742	680	St. s. San Jacinto.....	2,839	Mission Transportation & Refining Co., Oleum, Cal.:	1,554
*Sch. 780	926	St. s. San Marcos.....	2,358	*Sch. Fullerton	650
*Sch. 781	931	St. s. Santiago		Sch. Santa Paula	
*Sch. 783	923	Margaret Ship Co. (Inc.), 17 Battery Place, New York, N. Y.:	1,613	Montauk Steamboat Co. (Ltd.), 329 Pennsylvania Station, New York, N. Y.:	641
*Sch. 784	919	Ga. s. Margaret	767	St. s. Montauk	
Lejeune, Marc, Mayaguez, P. R.:	572	Marine Co. (Inc.), New Orleans, La.:	1,671	Monticello S. S. Co. (Inc.), foot of Clay St., San Francisco, Cal.:	670
Sch. William H. Sumner.....		Sch. Elizabeth Bandl.....	2,518	St. s. General Frisbie.....	719
Lever Transportation Co. (Inc.), Cambridge, Mass.:	862	Maru Navigation Co., 5 State St., New York, N. Y.:	795	Moody, Burton M. M., Calais, Me.:	707
Ga. s. Elizabeth Ruth.....		St. s. St. Charles.....	889	Sch. Kennebunk	
Lewers & Cooke (Ltd.), 169-177 South King St., Honolulu, Hawaii:	782	Maryanne Shipping Co. (Inc.), 17 State St., New York, N. Y.:	993	Moore & Co. (Inc.), J. J., 233 Pine St., San Francisco, Cal.:	
Sch. Alice Cooke	732	St. s. Maryanne.....	763	Sch. Carrier Dove	
Sch. Robert Lewers		Maryland, Delaware & Virginia Ry. Co., Pier 1, Baltimore, Md.:	677	Moore Timber Co., 90 West St., New York, N. Y.:	1,560
Libby, McNeill & Libby, 417 Market St., San Francisco, Cal.:	1,972	St. s. Anne Arundel	2,194	St. s. John M. Emery.....	
Shp. Abner Coburn.....	1,837	St. s. Calvert	1,586	Morris, R. G., 26 Beaver St., New York, N. Y.:	746
Bk. George Curtis	1,811	St. s. Northumberland	1,044	Ga. s. Helen Swanzy.....	1,272
Ga. s. Libby Maine.....	1,688	St. s. Potomac	943	Sch. Kingsway	
Bk. Oriental	1,560	Maryland Navigation Co., 33 South Gay St., Baltimore, Md.:	943	Multnomah S. S. Co., 1 Drumm St., San Francisco, Cal.:	969
Ga. s. W. F. Burrows		Sch. Jacob W. Hook	844	St. s. Multnomah	
Linderman, Fred, 110 Market St., San Francisco, Cal.:	1,473	Massey S. S. Co., New York, N. Y.:	897	Munn, F. W., 311½ Walnut St., Philadelphia, Pa.:	1,283
St. s. Rosalie Mahony.....	539	St. s. Blue Hill	907	*Sch. Harrisburg	1,283
Little River S. S. Co., 112 Market St., San Francisco, Cal.:	794	Matowoc Corp., 17 Battery Place, New York, N. Y.:	715	*Sch. Reading	
St. s. Washington.....		Sch. Matowoc		Munson S. S. Line, 82-92 Beaver St., New York, N. Y.:	5,095
Loop Co., Steamer, F. S., 16th Street Wharf, San Francisco, Cal.:	862	Matson Navigation Co., 120 Market St., San Francisco, Cal.:	943	St. s. Munales (a)	4,293
St. s. F. S. Loop.....	8,061	Ga. s. Annie Johnson	3,477	St. s. Munalbro	3,285
Lubarsky, George H., 69 Wall St., New York, N. Y.:	8,151	St. s. Enterprise	5,288	St. s. Munamar	3,315
Sch. Dustin G. Cressy.....	8,151	St. s. Hyades	3,868	St. s. Mundelta	3,315
Luckenbach Co. (Inc.), 44 Whitehall St., New York, N. Y.:	8,074	St. s. Lurline	3,190	St. s. Mundie (a)	4,388
St. s. Edgar F. Luckenbach.....	8,074	St. s. Manoa	2,415	St. s. Munio	
St. s. Edward Luckenbach	8,074	St. s. Matsonia		St. s. Munsomo	
St. s. Julia Luckenbach	4,018	St. s. Maul		St. s. Munwood	
Luckenbach, Edgar F., 44 Whitehall St., New York, N. Y.:	8,286	St. s. Wilhelmia		St. s. Tuscan (a)	
St. s. F. J. Luckenbach.....	10,798	Matthews S. S. Co., Daisy, 1 Drumm St., San Francisco, Cal.:	844	St. s. Walter D. Munson (a).....	
St. s. K. I. Luckenbach	5,505	St. s. Daisy Matthews.....	897	Each vessel incorporated under her own name except those marked a, which are incorporated as the Munson S. S. Line.	
St. s. Katrina Luckenbach	2,903	Melrose Lumber & Supply Co., 14th St. and 46th Ave., Oakland, Cal.:	907	Murphy, John George, 13 North Ann St., Mobile, Ala.:	589
St. s. Pleiades	4,623	Bk. Ferris S. Thompson.....	1,923	Sch. Annie M. Murphy.....	613
St. s. Walter A. Luckenbach.....	10,798	Mengel Box Co., of Jersey City, N. J. (Inc.), American National Bank Building, Pensacola, Fla.:	2,379	Sch. Rose E. Murphy.....	
Luckenbach S. S. Co. (Inc.), 44 Whitehall St., New York, N. Y.:	2,527	Sch. C. C. Mengel, Jr.....	2,379	Myers, George T., Colman Bldg., Seattle, Wash.:	1,461
McCormick & Co., Chas. R., 1 Dumm St., San Francisco, Cal.:	962	St. s. City of Baltimore.....	2,537	Shp. Elwell	
Sch. John W. Wells.....		St. s. City of Norfolk.....	3,018	Nafra Co. (Inc.), 120 Broadway, New York, N. Y.:	6,371
McGovern, Thomas B., 60 Broadway, New York, N. Y.:	954	St. s. City of Richmond.....	2,827	St. s. Chincha	5,915
Sch. Edith H. Symington.....		Merchants & Miners' Transportation Co., Light and German Sts., Baltimore, Md.:	3,581	St. s. Eurana	5,266
McIntyre Lumber & Export Co., 705 Van Antwerp Bldg., Mobile, Ala.:	655	St. s. Cretan	1,955	St. s. Plymouth	6,462
Bk. Anna Maria D'Abundo.....		St. s. Dorchester	3,465	St. s. Santa Cecilia	5,266
McKeague, Charles C., 112 South North Carolina Ave., Atlantic City, N. J.:	726	St. s. Essex	2,599	Naknek Packing Co., 73 Main St., San Francisco, Cal.:	1,323
Sch. Lizzie M. Parsons.....		St. s. Gloucester	3,099	Bk. B. P. Cheney.....	1,673
Maclean Navigation Corp., 29 Broadway, New York, N. Y.:	866	St. s. Grecian	2,461	Nelson Co. (Inc.), 230 California St., San Francisco, Cal.:	1,211
Sch. Mary Stuart.....	1,338	St. s. Howard		Bkn. Aurora	1,431
McNear (Inc.), G. W., 433 California St., San Francisco, Cal.:	604	St. s. Indian		Sch. Charles Nelson	688
Sch. Georgette		St. s. Juniata		Bk. Harvard	1,566
Bkn. Prins Valdemar		St. s. Kershaw		Sch. Harvester	737
Bkn. S. G. Wilder.....		St. s. Merrimack		Bkn. James Johnson.....	522
McWilliams Bros. (Inc.), 1 Broadway, New York, N. Y.:	1,587	St. s. Nantucket		Sch. Mary Winkelman	880
*Sch. Liberty	860	St. s. Ontario		Sch. Minnie A. Caine.....	1,230
*Sch. Mabel L. Phillips.....		St. s. Persian		St. s. Mukilteo	939
Magnolia Petroleum Co. (Inc.), Beaumont, Tex.:	1,161	St. s. Quantico			
*Sch. Chagres		Merritt & Co., John A., 806 South Palafox St., Pensacola, Fla.:	1,188		
Mahony, Andrew F., 871 Clayton St., San Francisco, Cal.:	2,051	Sch. Willis A. Holden.....			
Sch. Rose Mahony.....		Metropolitan Coal Co., 20 Exchange Place, Boston, Mass.:	1,618		
		St. s. J. H. Devereux.....			
		Mexican Fruit & S. S. Co., New Orleans, La.:	770		
		St. s. Wellesley			
		Miami S. S. Co., 32 Broadway, New York, N. Y.:	719		
		St. s. Van.....			

U. S. Seagoing Merchant Vessels

St. s. Port Angeles	1,358	New York Central R. R. Co., 450 Lexington Ave., New York, N. Y.:		Ore S. S. Corp., 111 Broadway, New York, N. Y.:	
Sch. Rufus E. Wood	1,432	St. s. New York Central No. 14.....	556	St. s. Feltore	7,117
St. s. Saginaw	888	New York, Ontario & Western Ry. Co.		St. s. Filtmore	7,117
Sch. Taurus	551	Weehawken, N. J.:		St. s. Mangore	4,066
Bkn. Thos. F. Emigh	1,040	*Sch. Cadonia	758	St. s. Santore	7,117
St. s. Wilmington	990	*Sch. Ellenville	858	Oriental Navigation Corp., 17 Battery Place, New York, N. Y.:	
Neptune Line (Inc.), 1 Broadway, New York, N. Y.:		*Sch. J. H. Rutter	1,234	St. s. Fair Oaks	1,275
*Sch. Albany	659	*Sch. Metacomet	852	Bk. Orleole	1,152
*Sch. Beechwood	841	*Sch. Sidney	745	Ga. s. Suzanne	1,431
*Sch. Binghamton	588	*Sch. Smyrna	741	Ostrander, H. F., 712 Leary Bldg., Seattle, Wash.:	
*Sch. Dunmore	589	*Sch. Thomas L. Parker	628	St. s. Frances L. Skinner	4,806
Bk. E. B. Sutton	1,811	New York, Philadelphia & Norfolk R. R. Co., Cape Charles, Va.:		Sch. Levi W. Ostrander	1,638
*Sch. Edgewater	864	St. s. Maryland	1,369	Overseas Sailing Ship Corp., 18 Broadway, New York, N. Y.:	
*Sch. George Moon	917	St. s. New York	770	Sch. Manuel Caragol	880
*Sch. Governor Roble	1,712	St. s. Pennsylvania	1,352	Pacific Alaska Navigation Co., Portland, Me.:	
*Sch. Hawthorne	680	Nichols (Inc.), Schooner Anthony D., 3 Bridge Plaza, Long Island City, N. Y.:		St. s. Admiral Sebree	2,446
Bk. I. F. Chapman	2,155	Sch. Anthony D. Nichols	680	Ga. s. Admiral Sims	1,929
*Sch. Luzon	1,358	Norlond Line (Inc.), 60 Wall St., New York, N. Y.:		Pacific Alaska Navigation Co., Tacoma, Wash.:	
*Sch. Marion	693	St. s. Norlond	522	Ga. s. Admiral Mayo	1,934
St. s. Neptune	544	North Atlantic Shipping Corp., 8 Bridge St., New York, N. Y.:		Pacific American Fisheries, Harris Ave., Bellingham, Wash.:	
*Sch. New Jersey	1,387	St. s. Cartagena	728	St. s. Bobring	2,457
*Sch. Passaic	875	Northern Commercial Co., 310 Sansome St., San Francisco, Cal.:		St. s. Bon Secour	2,458
*Sch. Riverside	863	Ga. s. Ozmo	785	St. s. Catherine D	2,224
*Sch. Sea King	1,491	Northern Fisheries (Inc.), Anacortes, Wash.:		St. s. Clio	2,475
*Sch. Stroudsburg	693	Sch. Carolyn Frances	570	St. s. Firwood	1,782
*Sch. Troy	660	Northern Transportation Co. (Inc.), 328 Dupont Bldg., Wilmington, Del.:		St. s. Norwood	1,323
*Sch. Wabash	1,186	St. s. Lexington	1,884	St. s. Redwood	1,793
Netherton Shipping Corp., 29 Broadway, New York, N. Y.:		*Sch. Maryland	811	St. s. Windber	2,837
Sch. Esther K.	1,001	*Sch. Northern No. 6	1,602	Pacific Coast Coal Co., 77 Washington St., Seattle, Wash.:	
New Bedford, Marthas Vineyard & Nantucket Steamboat Co. (Inc.), 2 Union St., New Bedford, Mass.:		*Sch. Northern No. 7	1,631	*Sch. William H. Smith	1,939
St. s. Sankaty	677	*Sch. Northern No. 12	970	Pacific Freighters Co. (Inc.), 310 California St., San Francisco, Cal.:	
New England Fuel & Transportation Co., 111 Devonshire St., Boston, Mass.:		*Sch. Northern No. 14	978	Bkn. Charles F. Crocker	860
*Sch. Alice	639	*Sch. Northern No. 17	967	Sch. Edward R. West	835
*Sch. Annie	1,098	*Sch. Northern No. 18	1,047	Sch. Meteor	600
St. s. Arlington	2,431	*Sch. Northern No. 29	1,261	Sch. Omega	584
*Sch. Beattie	1,117	*Sch. Northern No. 30	1,264	Sch. Rosamond	1,030
*Sch. Bessie	640	Sch. Northern No. 34	1,946	Sch. Watson A. West	818
*Sch. Biwabik	1,401	Sch. W. K. Moore	611	Pacific Mail S. S. Co., 508 California St., San Francisco, Cal.:	
St. s. Brandon	2,431	North Pacific Sea Products Co., Seattle, Wash.:		St. s. City of Para	3,404
*Sch. Clara	828	St. s. Elihu Thomson	896	St. s. Colombia	5,643
*Sch. Edith	859	Sch. Fresno	1,244	St. s. Ecuador	5,544
*Sch. Emille	1,069	Northwestern Shipping Co., Colman Building, Seattle, Wash.:		St. s. Newport	2,643
*Sch. Everett	5,065	St. s. H. B. Lovejoy	1,067	St. s. Peru	3,391
*Sch. Flora	865	Northwestern S. S. Co., Williamson Bldg., Cleveland, Ohio:		St. s. San Jose	2,135
*Sch. Grace	877	St. s. Northwestern	1,645	St. s. San Juan	2,152
*Sch. Hattie	1,286	Norwich & New York Propeller Co., 249 Water St., New London, Conn.:		St. s. Venezuela	5,641
*Sch. Helen	1,285	St. s. Chelsea	564	Pacific Mercantile Marine Co., Fife Bldg., San Francisco, Cal.:	
*Sch. Irene	1,206	Oceanic S. S. Co., 60 California St., San Francisco, Cal.:		St. s. J. B. Stetson	837
St. s. Malden	5,054	St. s. Sierra	6,135	St. s. Nehalem	685
St. s. Melrose	6,057	St. s. Sonoma	6,279	Pacific Motorschooner Corp., New York, N. Y.:	
St. s. Newton	5,001	St. s. Ventura	6,282	Ga. s. Louise Bryn	821
New England S. S. Co., Central St., Fall River, Mass.:		Ocean S. S. Co. of Savannah, 37 Bull St., Savannah, Ga.:		Pacific Shipping Co., 311 California St., San Francisco, Cal.:	
St. s. Boston	3,626	St. s. City of Atlanta	5,433	Bkn. Alta	1,381
New England S. S. Co., State St., New London, Conn.:		St. s. City of Augusta	2,869	Pacific S. S. Co., Portland, Me.:	
St. s. Chester W. Chapin	2,868	St. s. City of Columbus	5,433	St. s. Admiral Wainwright	1,783
St. s. City of Lowell	2,975	St. s. City of Montgomery	5,425	Pacific S. S. Co., Perkins Building, Tacoma, Wash.:	
St. s. Maine	2,395	St. s. City of Rome	3,648	St. s. Admiral Dewey	2,104
St. s. Mohawk	2,783	St. s. City of St. Louis	5,425	St. s. Admiral Evans	2,140
St. s. Mohegan	2,783	St. s. City of Savannah	5,654	St. s. Admiral Farragut	2,141
St. s. New Hampshire	2,395	St. s. Nacoochee	2,680	St. s. Admiral Goodrich	1,419
St. s. New Haven	2,930	Ohio Cities Gas Co., 817 Lafayette Bldg., Philadelphia, Pa.:		St. s. Admiral Nicholson	678
St. s. Pequonock	2,930	*Sch. Pure Oil Co. No. 3	754	St. s. Admiral Rodman	1,101
St. s. Richard Peck	2,906	Old Dominion S. S. Co., Pier 25, North River, New York, N. Y.:		St. s. Admiral Schley	2,104
New York & Baltimore Transportation Line, 112 Light St., Baltimore, Md.:		St. s. Berkeley	1,075	St. s. Admiral Watson	2,009
St. s. Baltimorean	927	St. s. Brandon	1,062	St. s. Aurelia	743
New York & Cuba Mail S. S. Co., foot of Wall St., New York, N. Y.:		St. s. Hamilton	3,723	St. s. City of Seattle	1,957
St. s. Antilla	3,668	St. s. Jamestown	2,898	St. s. City of Topeka	1,057
St. s. Bayamo	3,296	St. s. Jefferson	3,723	St. s. Curacao	1,548
St. s. Chamaguey	3,671	St. s. Madison	3,734	St. s. Governor	5,474
St. s. Esperanza	4,702	St. s. Princess Anne	3,629	St. s. Homer	501
St. s. Guantanamo	3,292	Oliver, Joseph A., 1285 Turk St., San Francisco, Cal.:		St. s. President	5,453
St. s. Manzanillo	1,921	Sch. A. F. Coats	617	St. s. Queen	2,727
St. s. Mantanzas	3,094	Sch. Melrose	615	St. s. Senator	2,432
St. s. Mexico	6,207	Olson, Oliver J., 1 Drumm St., San Francisco, Cal.:		St. s. Spokane	2,277
St. s. Monterey	4,702	St. s. Florence Olson	1,185	Pacific Transport Co., 430 Sansome St., San Francisco, Cal.:	
St. s. Morro Castle	6,004	St. s. Paraiso	1,437	St. s. Alvarado	2,053
St. s. Santiago	3,490	Olympia Shipping Corp., 76 Broad St., New York, N. Y.:		Palafox Shipbuilding Co. (Inc.), Pensacola, Fla.:	
St. s. Yumuri	1,835	Sch. Eva B. Douglass	1,093	Ga. s. Palafox	663
New York & New Orleans S. S. Co., Pier 39, North River, New York, N. Y.:		St. s. Parthian	2,001	Panama R. R. Co., 24 State St., New York, N. Y.:	
St. s. Cambridge	2,094	Sch. Ruth E. Merrill	3,003	St. s. Advance	2,458
New York & Porto Rico S. S. Co., 11 Broadway, New York, N. Y.:		Onelda Navigation Corp., 42 Broadway, New York, N. Y.:		St. s. Allinca	4,016
St. s. Brazos	6,399	Ga. s. Percy R. Pyne, 2nd	1,298	St. s. Ancon	9,332
St. s. Coamo	4,384	Sch. Perry Setzer	1,392	St. s. Colon	5,670
St. s. Corozal	3,129			St. s. Cristobal	9,332
St. s. Isabela	3,129			St. s. General G. W. Goethals	4,833
St. s. Marianna	3,129			St. s. General H. F. Hodges	2,732
St. s. Montoso	3,129			St. s. General O. H. Ernst	3,564
St. s. Ponce	3,570				
St. s. San Juan	3,543				
St. s. Santurce	1,836				

U. S. Seagoing Merchant Vessels

St. s. General W. C. Gorgas.....	4,564	Potter Transportation Co. (Inc.), 11 Broad-		*Sch. Pocopson	721
St. s. Panama	5,664	way, New York, N. Y.:		*Sch. Pottstown	974
Pan-American Petroleum & Transport Co.,		*Sch. Canisteo	671	*Sch. Preston	855
1015 Security Bldg., Los Angeles, Cal.:		*Sch. Chemung	671	*Sch. Richardson	693
St. s. C. A. Canfield.....	6,350	*Sch. Chocton	671	*Sch. Robesonla	955
St. s. Charles E. Harwood.....	3,178	*Sch. Hatteras	788	*Sch. Rutherford	955
St. s. Edward L. Doheny.....	6,170	*Sch. Pequest	843	*Sch. Salem	801
St. s. Edward L. Doheny, Junlor.....	7,706	*Sch. Pocono	698	*Sch. Saucun	955
St. s. Frederic R. Kellogg.....	7,127	Poulsen Co., Steamer Johan, foot of 16th		*Sch. Silver Brook	904
St. s. George E. Paddelford.....	4,787	St., San Francisco, Cal.:		*Sch. Skippack	739
St. s. George G. Henry.....	6,936	St. s. Johan Poulsen.....	650	*Sch. Spring	1,780
St. s. George W. Barnes.....	6,492	Providencia Steamer Co., 112 Market St.,		*Sch. Suffolk	855
St. s. Harold Walker.....	6,784	San Francisco, Cal.:		*Sch. Tabor	963
St. s. Herbert G. Wylie.....	4,292	St. s. Providencia.....	1,630	*Sch. Tamenend	721
St. s. J. M. Danziger.....	6,487	Puako Co., Barkentine, 310 California St.,		*Sch. Temple	963
St. s. Mexoll	1,370	San Francisco, Cal.:		*Sch. Thomaston	693
St. s. Norman Bridge	4,288	Bkn. Puako	1,084	*Sch. Tioga	1,012
St. s. Panoll	1,370	Puget Sound Navigation Co., Colman Dock,		*Sch. Tohickon	739
St. s. Paul H. Harwood.....	7,192	Seattle, Wash.:		*Sch. Tuckahoe	792
St. s. S. M. Spaulding.....	7,175	St. s. Chippewa	1,111	*Sch. Tulpehocken	721
St. s. William Green	6,784	St. s. Indianapolis	785	*Sch. Trenton	1,013
Pan American Transportation & Trading Co.		St. s. Iroquois	1,169	*Sch. Wiconisco	956
(Inc.), 3301 Chartres St., New Orleans,		St. s. Kulshan	926	*Sch. Yardley	963
La.:		St. s. Potlatch	575		
St. s. Powell	1,218	St. s. Sol Duc	1,085	Red Salmon Canning Co., 73 Main St., San	
Parr-McCormick S. S. Co., 1 Drumm St.,		St. s. Tacoma	836	Francisco, Cal.:	
San Francisco, Cal.:		St. s. Whatcom	716	Bk. Hecla	1,529
St. s. Bandon	642	Puget Sound Salvage Co., Central Bldg.,		Bk. St. Katherine	1,201
St. s. Daisy Freeman	613	Seattle, Wash.:		Redwood S. S. Co., Monadnock Bldg., San	
Patterson, T. B., 726 City Bank Bldg., Mo-		St. s. Santa Cruz.....	511	Francisco, Cal.:	
bile, Ala.:		Puget Sound Tugboat Co., Walker Bldg.,		St. s. Katherine.....	531
Sch. Rachel	528	Seattle, Wash.:		Reid, William C., Eagle and Provost Sts.,	
Paul & Co., C. C., 203 Stewart Bldg., Bal-		*Sch. Washougal	710	Brooklyn, N. Y.:	
timore, Md.:		*Sch. Washtacna	710	*Sch. Dorothy	887
Sch. Albert F. Paul.....	735	Pure Cane Molasses Corp., 69 Wall St.,		*Sch. Sedgwick	605
Pedersen, L. A., 112 Market St., San Fran-		New York, N. Y.:		Resolved Corp., Eleventh Ave. and Twenty-	
cisco, Cal.:		Sch. Lohocla	791	fifth St., New York, N. Y.:	
Bkn. City of Sydney.....	2,903	Putnam S. S. Co., Daisy, 1 Drumm St.,		Ga. s. James Timpson.....	2,016
St. s. Costa Rica	1,783	San Francisco, Cal.:		Robert Navigation Corp., 29 Broadway, New	
Bk. McLaurin	1,374	St. s. Daisy Putnam.....	886	York, N. Y.:	
Bk. Narwhal	523	Pyne Co. (Inc.), 15 William St., New		Sch. Robert P. Murphy.....	697
Pelican Motor Ship Co. (Inc.), 52 Broad-		York, N. Y.:		Robinson Transportation Co., 7 West Tenth	
way, New York, N. Y.:		Sch. Isabel C. Harriss.....	1,078	St., Wilmington, Del.	
Ga. s. Pelican	1,745	St. s. Montara	2,562	Sch. Josephine	940
Pendleton Bros. (Inc.), 130 Pearl St., New		Quina, Robert S., Pensacola, Fla.:		Rockland & Rockport Lime Co., Rockland,	
York, N. Y.:		Sch. Burkland	706	Me.:	
Sch. Rachel W. Stevens.....	1,211	Rama Navigation Co., 704-705 Whitney-		*Sch. Number One	1,120
Pendleton, Fields S., 130 Pearl St., New		Central Bldg., New Orleans, La.:		*Sch. Number Two	1,120
York, N. Y.:		St. s. Rama	1,577	*Sch. Number Three	1,120
Sch. Brina P. Pendleton.....	1,513	Ramsay Navigation Co., 29 Broadway, New		*Sch. Number Four	1,120
Sch. Virginia Pendleton	1,547	York, N. Y.:		*Sch. Number Six	1,120
Pendleton, Winfield S., 130 Pearl St., New		Sch. Robert H. McCurdy.....	735	Rogers & Webb, 110 State St., Boston,	
York, N. Y.:		Reading Co., 12th and Market Sts., Phila-		Mass.:	
*Sch. Iron Queen	1,384	delphia, Pa.:		Sch. Albert H. Willis.....	567
Peninsular & Occidental Transportation Co.,		*Sch. Barry	954	Sch. Edwin G. Farrar.....	556
42 Church St., New Haven, Conn.:		*Sch. Bast	693	Sch. Frank A. Morey.....	574
St. s. Mascotte	881	*Sch. Bear Ridge	910	Sch. George S. Smith.....	577
St. s. Miami	1,744	*Sch. Belmont	969	Sch. Grand Turk	540
Pennsylvania Coal Co., 165 Broadway,		*Sch. Bethayres	955	Sch. James E. Coburn.....	987
New York, N. Y.:		*Sch. Brookside	841	Sch. James M. W. Hall.....	572
*Sch. Hackensack	875	*Sch. Buck Ridge	915	Sch. William E. Litchfield.....	542
*Sch. Rondout	831	*Sch. Cacoozing	721		
Pennsylvania R. R. Co., Pennsylvania Sta-		*Sch. Cleona	956	Rolph, James, jr., 230 California St., San	
tion, New York, N. Y.:		*Sch. Coccallo	956	Francisco, Cal.:	
St. s. P. R. R. No. 153.....	547	*Sch. Cohansey	807	Sch. Charles B. Kenney.....	1,074
St. s. P. R. R. No. 154.....	549	*Sch. Conewago	956	Sch. Honolulu	564
St. s. P. R. R. No. 155.....	584	*Sch. Cumru	1,780	Shp. William T. Lewis.....	2,156
St. s. P. R. R. No. 156.....	584	*Sch. Draper	855		
Pershing Navigation Co., Portland, Oreg.:		*Sch. Eagle Hill	911	Rolph Navigation & Coal Co. (Inc.), 230	
Ga. s. General Pershing.....	2,450	*Sch. Enterprise	901	California St., San Francisco, Cal.:	
Petroleum Products Co., Union League Club,		*Sch. Ephrata	954	St. s. Annette Rolph.....	2,361
San Francisco, Cal.:		*Sch. Exeter	1,780	Shp. Annie M. Reid.....	2,165
Sch. Mindoro	679	*Sch. Franklin	910	Bkn. Annie M. Rolph.....	1,393
Phyllis Navigation Co. (Inc.), 18 Broadway,		St. s. Gedney	728	Bkn. Edward May.....	885
New York, N. Y.:		*Sch. Glendower	855	St. s. Georgina Rolph.....	2,404
Bk. Phyllis	2,246	*Sch. Glenside	974	Shp. Golden Gate.....	2,340
Phyllis S. S. Co., Balboa Bldg., San Fran-		*Sch. Herndon	1,763	Sch. Golden Shore	699
cisco, Cal.:		*Sch. Indian Ridge	910	Sch. Golden State	1,014
St. s. Phyllis	1,266	*Sch. Kimberlon	955	Sch. Isaac Reed	1,491
Pierce Oil Corp., 25 Broad St., New York,		*Sch. Langhorne	955	Shp. James Rolph.....	2,108
N. Y.:		*Sch. Leesport	963	St. s. Joan of Arc.....	2,432
St. s. Mexicano.....	2,265	*Sch. Lincoln	855	Bkn. Rolph	1,386
Ga. s. Pennant.....	3,253	*Sch. Macungie	956		
Pittsburgh Coal Co., Henry W. Oliver Bldg.,		*Sch. Mahony	855	Rolph S. B. Co. (Inc.), 230 California St.,	
Pittsburgh, Pa.:		*Sch. Manatamy	721	San Francisco, Cal.:	
Sch. Richard T. Green.....	1,467	*Sch. Manhelm	955	Bkn. Hesperian	1,385
Pocahontas Fuel Co. (Inc.), Board of Trade		*Sch. Maple Hill	911	Rosario Navigation Corp., New York, N. Y.:	
Bldg., Boston, Mass.:		*Sch. Marion	854	Ga. s. Risor	1,604
St. s. Bylavl	3,289	*Sch. Merriam	855	Ross Navigation Corp., 66 Broadway, New	
St. s. Freeman	3,350	*Sch. Mingo	954	York, N. Y.:	
St. s. Johancy	3,289	*Sch. Molino	954	Sch. Betsey Ross.....	1,630
Pope & Talbot (Inc.), Third and Berry		*Sch. Monitor	955	Runyan, William B. (trustee), Pensacola,	
Sts., San Francisco, Cal.:		*Sch. Moselem	963	Fla.:	
St. s. Yosemite.....	827	*Sch. Neshaminy	721	Sch. Horace M. Bickford.....	503
Port Blakely Mill Co. (Inc.), 16 California		*Sch. Oak Hill	910	Rush, J. H., Lumber City, Ga.:	
St., San Francisco, Cal.:		*Sch. Octoraro	807	Ga. s. Greater Macon.....	604
Sch. Bainbridge	566	*Sch. Oley	1,780	Sagadahoe Towing Co., Topsham, Me.:	
Sch. Blakely	751	*Sch. Ontelaunee	739	*Sch. S. T. Co. No. 2.....	526
Potter, E. G., 16 Beaver St., New York,		*Sch. Paxinos	954	*Sch. S. T. Co. No. 4.....	526
N. Y.:		*Sch. Paxtang	954		
Ga. s. George H. Barnes.....	1,611	*Sch. Pennington	967	St. Johns (N. F.) Shipping Corp., 29	
Potter S. S. Co. (Inc.), 11 Broadway,		*Sch. Pennypack	739	Broadway, New York, N. Y.:	
New York, N. Y.:		*Sch. Phoenix	901	Sch. St. Johns, N. F.....	2,046
*Sch. Coastwise.....	1,432	*Sch. Pickering	739	St. Paul S. S. Co. (Inc.), 50 Broad St.,	
				New York, N. Y.:	
				St. s. St. Paul.....	2,029

U. S. Seagoing Merchant Vessels

Sanders & Kirchmann (Inc.), Merchants' Exchange, San Francisco, Cal.:	
Sch. Commerce	658
Sch. Forester	663
Sch. Luzon	545
Sch. Philippine	523
Sch. Samar	710
San Francisco & Portland S. S. Co., Pier 40, San Francisco, Cal.:	
St. s. Rose City	3,468
San Francisco S. S. Co. (Inc.), 310 Cali- fornia St., San Francisco, Cal.:	
St. s. Faith	3,427
San Ramon S. S. Co. (Inc.), 610 Whitney Bldg., New Orleans, La.:	
St. s. San Ramon	993
Santa Rosa Marine Co., Milton, Fla.:	
Sch. Santa Rosa	695
Savannah-New York Transportation Co., 17 Battery Place, New York, N. Y.:	
*Sch. Altamaha	944
*Sch. Beaufort	944
*Sch. Belfast	944
*Sch. Chehaw	944
*Sch. Darien	944
*Sch. Satilla	944
*Sch. Savanna	944
*Sch. Vale Royal	944
Schooner Esther Melbourne Corp., 18 Old Slip, New York, N. Y.:	
Sch. Esther Melbourne	776
Schooner Frederick J. Lovatt Corp., 18 Old Slip, New York, N. Y.:	
Sch. Frederick J. Lovatt	510
Schooner Herald Co. (Inc.), Tampa, Fla.:	
Sch. Herald	500
Schooner J. Edward Drake Corp., 18 Old Slip, New York, N. Y.:	
Sch. J. Edward Drake	910
Scott, J. M., 29 Broadway, New York, N. Y.:	
Bkn. Amazon	1,167
Sch. Mabel Gale	762
Sch. Salem	787
Sch. Three Marys	1,151
Sch. W. H. Marston	1,169
Scott, L. A., Van Antwerp Bldg., Mobile, Ala.:	
Sch. Virginia	585
Seaboard & Gulf S. S. Co., Pier 32, East River, New York, N. Y.:	
St. s. Kennebec	2,183
Seaboard Transportation Co., 141 Milk St., Boston, Mass.:	
*Sch. George R. Skolfield	1,728
*Sch. Idaho	1,376
*Sch. Indiana	1,626
*Sch. Kentucky	1,575
*Sch. Occidental	1,532
*Sch. Ohio	1,629
*Sch. Pottsville	1,283
Seaconnet Coal Co., 70 Kilby St., Boston, Mass.:	
St. s. Meteor	2,324
Seattle Construction & D. D. Co., foot of Charles St., Seattle, Wash.:	
St. s. Comanche	547
Serern Transportation Co., 7 West Tenth St., Wilmington, Del.:	
Bk. Serern	923
Shawmut S. S. Co., 80 Federal St., Boston, Mass.:	
St. s. Sudbury	5,075
Shell Line, Wilmington, Del.:	
St. s. Gold Shell	5,614
St. s. Pearl Shell	5,614
St. s. Silver Shell	5,605
Each vessel is incorporated under her her own name.	
Shepherd & Morse Lumber Co., 201 Devon- shire St., Boston, Mass.:	
Shp. Windrush	1,531
Sherman S. S. Co., 120 Broadway, New York, N. Y.:	
St. s. Sherman	4,725
Shoshone Navigation Corp., 21 State St., New York, N. Y.:	
St. s. Shoshone	4,708
Sinclair Gulf Corp., 120 Broadway, New York, N. Y.:	
St. s. Gene Crawley (a)	3,184
St. s. Harry Farnum (a)	3,098
St. s. Panuco (b)	2,556
St. s. Tamesi (b)	2,939
St. s. Walter Hardcastle (a)	3,098
The vessels marked (a) are incorporated as the Sinclair Navigation Co.; those marked (b) as the Freeport & Tampico Fuel Oil Transporta- tion Co.	
Smith, C. Henry, 311 California St., San Francisco, Cal.:	
Sch. Snow and Burgess	1,591
Smith & Terry (Inc.), 11 Broadway, New York, N. Y.:	
*Sch. Smith & Terry No. 1	1,156
*Sch. Smith & Terry No. 2	1,251
Smith Navigation Corp., 17 Battery Place, New York, N. Y.:	
St. s. Amazonia	2,189
Sch. Commack	1,446
Sch. Nissegogue	971
Sch. Rassapeage	971
Ga. s. Sherewog	1,353
Snowdon Shipping Co., 92 State St., Bos- ton, Mass.:	
Bk. Snowdon	1,111
Somerville, J. W., Durham Bldg., Gulfport, Miss.:	
Sch. Gertrude A. Somerville	556
South American S. S. Corp., 8 Bridge St., New York, N. Y.:	
Sch. Malcolm Baxter, Jr.	1,732
Southern Pacific Co., Pier 49, North River, New York, N. Y.:	
St. s. Chalmette	3,205
St. s. Comus	4,828
St. s. Creole	6,754
St. s. El Alba	4,614
St. s. El Almirante	5,216
St. s. El Capitan	5,216
St. s. El Cid	4,608
St. s. El Dia	4,613
St. s. El Mar	3,531
St. s. El Monte	3,531
St. s. El Mundo	6,008
St. s. El Norte	4,604
St. s. El Occidente	6,008
St. s. El Oriente	6,008
St. s. El Paso	3,531
St. s. El Rio	4,604
St. s. El Siglo	4,616
St. s. El Sol	6,008
St. s. El Sud	4,572
St. s. El Valle	4,605
St. s. Excelsior	3,542
St. s. Momus	6,878
St. s. Topila	5,125
St. s. Torres	4,943
Southern S. S. Co., Commercial Trust Bldg., Philadelphia, Pa.:	
St. s. Algiers	2,294
St. s. Shawmut	1,624
St. s. William P. Palme	2,293
Southern Transportation Co., 16 South St., Philadelphia, Pa.:	
*Sch. Newark	820
*Sch. Salem	703
Speedwell Navigation Co. (Inc.), Peters Ave. and River St., New Orleans, La.:	
St. s. Speedwell	971
Spofford, George H., Deer Isle, Me.:	
Sch. Thelma	525
Stahl, Adolfo, 310 Sansome St., San Francisco, Cal.:	
St. s. San Antonio	785
St. s. San Mateo	601
Standard Commercial S. S. Corp., 15 White- hall St., New York, N. Y.:	
St. s. Segurana	4,033
Standard Oil Co., Pier 2, Pratt St., Bal- timore, Md.:	
*Sch. American	836
Standard Oil Co. (Cal.), Standard Oil Bldg., San Francisco, Cal.:	
St. s. Asuncion	2,196
St. s. Atlas	2,005
St. s. Captain A. F. Lucas	4,188
St. s. Col. E. L. Drake	4,205
Ga. s. Contra Costa	832
St. s. D. G. Scofield	8,851
St. s. El Segundo	3,863
St. s. J. A. Moffett	6,521
Ga. s. La Merced	1,696
Ga. s. Oronite	1,704
St. s. Richmond	6,563
*Sch. S. O. Co. No. 91	2,019
*Sch. S. O. Co. No. 93	2,473
*Sch. S. O. Co. No. 95	4,212
Standard Oil Co. (N. J.), 26 Broadway, New York, N. Y.:	
St. s. A. C. Bedford	10,614
St. s. Ampetco	8,301
St. s. Ardmore	7,125
Ga. s. Bacol	1,714
St. s. Baton Rouge	4,973
St. s. Bayway	5,083
St. s. Benjamin Brewster	5,579
St. s. Bradford	6,303
St. s. Brindilla	4,170
St. s. Caddo	6,329
St. s. Caloria	4,095
St. s. Charles Pratt	10,050
St. s. Chinampa	7,057
St. s. Communipaw	3,710
St. s. Corning	5,073
St. s. Dayton	5,335
Ga. s. Dawnlite	1,976
Ga. s. Daylite	
St. s. De Sota	1,976
St. s. El Capitan	6,268
St. s. F. D. Asche	1,881
St. s. F. Q. Barstow	8,293
St. s. Fred W. Weller	10,289
St. s. Glenpool	10,626
St. s. H. H. Rogers	5,774
St. s. H. M. Flagler	10,050
St. s. J. A. Bostwick	8,207
St. s. James McGee	7,929
St. s. John D. Rockefeller	10,677
St. s. Josiah Macy	8,374
St. s. L. J. Drake	6,899
St. s. Mathincock	6,836
St. s. Montrolite	6,766
Ga. s. Moonlite	6,834
St. s. Muskogee	1,955
St. s. O. T. Waring	7,224
St. s. Pioneer	5,579
St. s. Polarine	5,075
St. s. Princeton	4,046
St. s. S. B. Hunt	5,081
St. s. S. V. Harkness	6,689
St. s. Somerset	5,079
St. s. Standard	10,073
Ga. s. Starlite	1,955
Ga. s. Sunlite	1,976
St. s. Trontolite	6,882
Ga. s. Twillite	1,955
St. s. W. C. Teagle	10,677
St. s. W. H. Tilford	5,579
St. s. Wico	2,748
St. s. Wm. G. Warden	10,289
Standard Oil Co. of New York, 26 Broad- way, New York, N. Y.:	
St. s. Brilliant	2,486
St. s. City of Everett	2,595
St. s. Comet	2,486
St. s. Ecocene	2,219
St. s. Perfection	2,209
St. s. Radiant	2,487
*St. s. Rayo	3,663
St. s. Socony	3,663
Ga. s. Socony 5	830
*Sch. Socony 56	589
*Sch. Socony 57	1,381
*Sch. Socony 58	1,643
Ga. s. Socony 62	848
*Sch. Socony 81	1,774
*Sch. Socony 82	2,320
*Sch. Socony 83	2,440
*Sch. Socony 84	2,441
*Sch. Socony 85	2,441
*Sch. Socony 86	1,102
*Sch. Socony 89	2,452
*Sch. Socony 90	2,451
*Sch. Socony 92	3,248
*Sch. Socony 94	4,167
*Sch. Socony 123	952
*Sch. Socony 124	952
St. s. Vesta	3,663
Standard Transportation Co., 26 Broadway, New York, N. Y.:	
St. s. Acme	6,895
St. s. Astral	8,853
St. s. Broad Arrow	7,796
St. s. Peerless	6,273
St. s. Royal Arrow	7,794
St. s. Standard Arrow	7,794
St. s. Sylvan Arrow	7,797
St. s. Tiger	6,273
Stanley Navigation Co. (Inc.), 29 Broad- way, New York, N. Y.:	
Sch. Joseph S. Zeman	1,966
Stanwood S. S. Co., Balboa Bldg., San Francisco, Cal.:	
St. s. Stanwood	1,129
Staples Transportation Co., 404 Darol St., Fall River, Mass.:	
*Sch. Atlantic	1,900
*Sch. Braddock	678
*Sch. Brockton	567
*Sch. Canton	531
*Sch. Cardenas	1,576
*Sch. Chatham	1,812
*Sch. Cienfuegos	1,915
*Sch. Easton	531
*Sch. Fall River	1,759
*Sch. Falmouth	2,238
*Sch. Gibson	839
*Sch. Havana	1,617
*Sch. Mount Hope	1,801
*Sch. Randolph	567
*Sch. Remus	531
*Sch. Tipton	830
*Sch. Wollaston	1,378
Stark, Archibald L., Boston, Mass.:	
St. s. Yehama	3,129
Steamship Mae Co. (Inc.), 17 State St., New York, N. Y.:	
St. s. Mae	2,103

U. S. Seagoing Merchant Vessels

Sterling Ship Co., 943 Sixteenth Ave. N., Seattle, Wash.:	2,577	Traders Shipping Corp., 64 Wall St., New York, N. Y.:	686	St. s. Alector	2,594
Bkn. E. R. Sterling		Sch. Hope Sherwood		St. s. Aledo	5,123
Stewart, L. C., 260 California St., San Francisco, Cal.:	974	Transoceanic Shipping Co., 25 Beaver St., New York, N. Y.:	1,476	St. s. Allentown	4,938
St. s. Trinidad		Sch. Margaret	1,881	St. s. Allies	3,658
Struven, Charles M., 114 Frederick St., Baltimore, Md.:	632	St. s. Navahoe		St. s. Allison	2,551
Sch. Charles M. Struven	693	Truving Shipping (Inc.), Produce Exchange, New York, N. Y.:	503	St. s. Alloway	6,165
Sch. Dorothea L. Brinkmann		Sch. Richard W. Clark		St. s. Alpaco	2,551
Sudden & Christenson, Merchants Exchange, San Francisco, Cal.:	633	Truxillo S. S. Corp., 17 Battery Place, New York, N. Y.:	2,265	St. s. Alpa	2,551
St. s. Carmel	663	St. s. Truxillo		St. s. Alrada	2,573
St. s. Chehalis	1,783	Turner, Herbert C., Turner Terminals, Mobile, Ala.:	970	St. s. Ambridge	6,848
St. s. Edna	659	Sch. Alpena	693	St. s. America	2,405
St. s. Grays Harbor	595	Sch. Stimson		St. s. Ammonoosuc	2,551
St. s. Raymond		Turner, Horace, Turner Terminals, Mobile, Ala.:	1,485	St. s. Amphion	7,409
Sugar Products Co., 69 Wall St., New York, N. Y.:	660	Sch. Addison E. Bullard	800	St. s. Anacortes	4,823
Sun Co., Finance B'dg., Philadelphia, Pa.:	6,669	Bk. Doon	691	St. s. Andalusia	5,509
St. s. Chester Sun	2,627	St. s. Thomas L. Wand	645	St. s. Andra	2,551
St. s. Paraguay	6,728	Turner J. Tyler, Mobile, Ala.:	590	St. s. Angelina	2,554
St. s. Sabine Sun	5,273	Sch. W. J. Patterson		St. s. Aniva	1,594
St. s. Santa Rita	4,836	Tweddie, M. Stanley, 53 Pearl St., New York, N. Y.:	532	St. s. Anna	3,658
St. s. Sun	7,157	Sch. Momie T.		St. s. Anniston	2,922
St. s. Sunoil	2,951	Union Lumber Co., Crocker Bldg., San Francisco, Cal.:	6,889	St. s. Anoka	2,537
Susquehanna S. S. Co. (Inc.), 25 Broad St., New York, N. Y.:	2,971	St. s. Brunswick	6,876	St. s. Anthera	2,551
St. s. Susquehanna		Union Oil Co. of California, Mills Bldg., San Francisco, Cal.:	6,054	St. s. Aowwa	2,551
Taggart & Coal Co. (Inc.), Savannah Bank & Trust Co. Bldg., Savannah, Ga.:	278	St. s. La Brea	2,986	St. s. Apalachee	2,474
*Sch. Benefactor	583	St. s. Los Angeles	2,237	St. s. Apelles	8,398
Tarver Shipbuilding Corp., Beaumont, Tex.:		St. s. Lyman Stewart		St. s. Arado	2,551
Sch. Geneva Kathleen		St. s. Oleum		St. s. Arambí	2,551
Template Ship Corp., 7 West 10th St., Wilmington, Del.:	700	*Sch. Simla		Shp. Arapahoe	2,163
Sch. Template		Union Petroleum S. S. Co., 26 Broadway, New York, N. Y.:	5,275	St. s. Arcadia	5,453
Texas Co., Dock 29, Port Arthur, Tex.:	2,621	St. s. Westwego		St. s. Archer	7,610
St. s. Alabama	2,773	Union S. S. Co., Mills Bldg., San Fran- cisco, Cal.:	2,953	St. s. Ardena	2,560
St. s. Brabant	1,148	St. s. Argyll	7,318	St. s. Argenta	3,343
*Sch. Dallas	3,206	St. s. Coalunga	4,560	St. s. Armenia	6,483
Shp. Edward Sewall	1,596	St. s. Lansing	2,896	St. s. Artemis	8,413
St. s. Florida	5,106	St. s. Washtenaw		St. s. Arundel	2,550
St. s. Georgia	2,849	Union Sulphur Co., 17 Battery Place, New York, N. Y.:	3,365	St. s. Ascutney	4,966
St. s. Louisiana	2,498	St. s. Frieda	5,398	St. s. Ashburn	2,799
Ca. s. Maryland	681	St. s. Hewitt		St. s. Askawake	6,148
*Sch. Magnolia	6,678	United Fruit Co., 17 Battery Place, New York, N. Y.:	4,954	St. s. Asinippi	3,642
St. s. New York	3,207	St. s. Abangarez	4,961	St. s. Asotin	2,541
*Sch. Northwestern	1,994	St. s. Atenas	7,782	St. s. Astoria	3,020
*Sch. Tampico	6,678	St. s. Calamares	5,012	St. s. Auburn	6,047
St. s. Texas	607	St. s. Carrillo	4,937	St. s. Aurora	2,585
Texas S. S. Co., 17 Battery Place, New York, N. Y.:	6,666	St. s. Cartago	3,191	St. s. Arondale	5,731
St. s. Pennsylvania	6,666	St. s. Coppename	3,297	St. s. Awensdaw	2,799
Thames Tow Boat Co., 224 Bank St., New London, Conn.:	516	St. s. Esparta	2,118	St. s. Baganito	2,445
Sch. Edith	578	St. s. Heredia	3,297	St. s. Balabac	2,551
Slp. Hornet	2,198	St. s. Levisa	5,011	St. s. Baladan	3,004
*Sch. John Forsyth	1,595	St. s. Limon	7,781	St. s. Baldbutte	6,435
*Sch. Marion Chappell	703	St. s. Metapan	3,296	St. s. Balino	2,551
Sch. Pequod	1,042	St. s. Parismina	3,300	St. s. Ballett	3,012
*Sch. Theodora Palmer	840	St. s. Pastores	5,013	St. s. Balosaro	2,469
Sch. Virginia Palmer	797	St. s. San Jose	3,283	St. s. Balsam	5,104
Sch. Volunteer		St. s. San Mateo	3,274	St. s. Balsto	2,551
Thane & Co., A. F. Hobart Bldg., San Francisco, Cal.:	696	St. s. Santa Marta	5,017	St. s. Banago	2,551
Sch. Alumna	700	St. s. Saramacca	3,274	St. s. Banaran	2,551
Bkn. Echo		St. s. Sixaola	3,274	St. s. Bancroft	2,537
Thompson, Jr., Joseph R., 2538 Poplar St., Westchester, New York, N. Y.:	1,191	St. s. Suriname	5,012	St. s. Barabos	2,564
Sch. Benjamin A. Van Brunt		St. s. Tivives		St. s. Bar Harbor	2,431
Thurlow, Lewis K., 131 State St., New York, N. Y.:	830	St. s. Turrialba		St. s. Barrington	2,564
Sch. Augusta W. Snow	1,143	St. s. Zacapa		St. s. Basan	2,551
Sch. Charles A. Dean	1,326	Each vessel is incorporated under her own name.		St. s. Batanes	2,554
Sch. Edna M. McKnight	999	United States Shipping Board, Washington, D. C.:	2,929	St. s. Battahatchie	2,551
Sch. Ellen Little	1,042	St. s. Abrigada	5,335	St. s. Battonville	2,440
Sch. Florence Thurlow	1,191	St. s. Abron	5,568	St. s. Baxley	2,551
Sch. Fred W. Thurlow	1,191	St. s. Absaroka	3,372	St. s. Bay Head	3,642
Sch. Helen Barnett Gring	1,226	St. s. Absecon	5,898	St. s. Bayou Teche	2,551
Sch. Horace A. Stone	1,376	St. s. Accomac	2,565	St. s. Beaumont	2,551
Sch. Horatio G. Foss	846	St. s. Acroma	2,594	St. s. Bedminster	2,551
Sch. Jennie Flood Kregar	1,838	St. s. Aculeo	2,537	St. s. Beechland	3,355
Sch. Margaret Thomas	1,427	St. s. Adway	2,564	St. s. Belair	2,551
Sch. Samuel W. Hathaway	1,038	St. s. Afalkey	5,753	St. s. Belding	2,573
Sch. Theoline	594	St. s. Afel	2,594	St. s. Belfort	6,831
Tiverton Co., Steamer, 112 Market St., San Francisco, Cal.:	557	St. s. Afrania	3,658	St. s. Belgrade	2,551
St. s. Tiverton		St. s. Agarista	2,580	St. s. Bellbuckle	6,831
Tonsmiere, S. A., Mobile, Ala.:		St. s. Agawam	5,229	St. s. Bellingham	4,854
People's Bank, St. Francis and Con- ception Sts.	1,145	St. s. Agria	5,080	St. s. Bellota	2,620
Sch. Pat Harrison		St. s. Agwidale	2,594	St. s. Beloit	2,531
Tooker, George A., 16 Beaver St., New York, N. Y.:	739	St. s. Agwistar	2,594	St. s. Belvidere	5,123
Ga. s. Sara E. Turner		St. s. Ahala	2,537	St. s. Benoni	6,330
Towles, W. H., Fort Myers, Fla.:	542	St. s. Aiken	2,573	St. s. Benrola	3,020
St. s. City of Philadelphia		St. s. Alimwell	2,799	St. s. Benzonia	2,573
Town of New Shoreham, New Shoreham, R. I.:	503	St. s. Alirie	2,545	St. s. Berea	2,551
St. s. New Shoreham		St. s. Alabat	3,658	St. s. Berela	4,992
		St. s. Alamosa	2,551	St. s. Berwyn	4,823
		St. s. Alanthus	2,573	St. s. Bessemer	2,674
		St. s. Alapaha	2,594	St. s. Bethlehem	3,658
		St. s. Aleis	3,658	St. s. Bethlehem Bridge	6,182
		St. s. Alcona	8,343	St. s. Betsy Bell	3,021
		St. s. Alderman		St. s. Biran	2,873
				St. s. Birchleaf	2,799
				St. s. Black Arrow	6,599
				St. s. Blair	5,784
				St. s. Blakeley	2,889
				Sch. Blanche H. King	1,156
				St. s. Blandon	3,017
				St. s. Bloomington	2,575
				St. s. Blue Eagle	2,531
				St. s. Blythedale	2,612
				St. s. Bockonoff	2,455
				St. s. Bollston	3,017
				St. s. Bologan	2,565
				St. s. Bonham	3,340

U. S. Seagoing Merchant Vessels

St. s. Bonifay	2,531	St. s. Cohasset	5,769	St. s. Edgecombe	6,987
St. s. Bonnafon	2,542	St. s. Cokato	3,658	St. s. Edgefield	6,990
St. s. Bonnetee	2,453	St. s. Cokesit	6,224	St. s. Edgell	6,964
St. s. Boone	2,551	St. s. Coloma	2,526	St. s. Edgemont	6,962
St. s. Boonsborough	2,551	St. s. Colorado Springs	7,006	St. s. Edgemoor	6,999
St. s. Borad	2,441	St. s. Columbia	1,923	St. s. Edgewood	7,000
St. s. Boretta	3,361	St. s. Columbine	2,551	St. s. Edisto	7,003
St. s. Boston	2,557	St. s. Congaree	2,551	St. s. Edmore	7,002
St. s. Boston Bridge	3,642	St. s. Connersville	2,232	St. s. Eldena	7,000
St. s. Botsford	2,474	St. s. Conotton	2,327	St. s. Eldridge	7,004
St. s. Bottineau	2,533	St. s. Consort	3,858	St. s. Eelbeck	6,424
St. s. Boulton	2,584	St. s. Contoocook	2,344	St. s. Eilnor	4,295
St. s. Bound Brook	3,658	St. s. Coosa	1,969	St. s. Elmsport	7,004
St. s. Boxbutte	2,564	St. s. Copalgrove	2,324	St. s. Englewood	5,138
St. s. Boxley	2,532	St. s. Coperas	2,153	St. s. Erny	6,515
St. s. Boykin	2,564	St. s. Coquina	2,153	St. s. Esopus	2,551
St. s. Braddock	6,861	St. s. Coraspeak	2,153	St. s. Euharlee	2,551
St. s. Braeburn	2,922	St. s. Corcoran	2,153	St. s. Evansville	3,944
St. s. Brandywine	4,969	St. s. Cornucopia	2,153	St. s. Everglades	2,362
St. s. Brasher	3,658	St. s. Coronado	5,967	St. s. Eyota	2,529
St. s. Braxton	2,922	St. s. Corrales	2,157	St. s. Falmouth	2,551
St. s. Bremerton	4,856	St. s. Corsicana	2,157	St. s. Faraby	3,658
St. s. Briton	2,434	St. s. Corson	5,753	St. s. Farnam	3,658
St. s. Bromela	2,959	St. s. Corydon	2,351	St. s. Federal	6,868
St. s. Brompton	2,940	St. s. Costigan	6,126	St. s. Ferdinandina	2,551
St. s. Broncho	2,940	St. s. Costilla	2,351	St. s. Flavel	3,016
St. s. Brookdale	2,935	St. s. Cotopaxi	2,351	St. s. Fluor Spar	5,756
St. s. Brookfield	2,961	St. s. Cotteral	3,020	St. s. Folsom	2,551
St. s. Brookhaven	2,923	St. s. Cottonplant	2,450	St. s. Forster	2,552
St. s. Brookland	2,934	St. s. Cottonwood	2,450	St. s. Fort Leavenworth	2,532
St. s. Brookside	2,945	St. s. Coulee	2,450	St. s. Fort Pitt Bridge	3,658
St. s. Buckhannon	2,469	St. s. Council Bluffs	2,450	St. s. Fort Riley	2,539
St. s. Buckhorn	2,590	St. s. Couprie	2,450	St. s. Fort Russell	2,541
St. s. Bugaya	2,551	St. s. Courageous	7,887	St. s. Fort Scott	2,594
St. s. Buhisan	2,973	St. s. Courtis	2,450	St. s. Fort Seward	2,537
St. s. Bulana	2,573	St. s. Couthatta	2,450	St. s. Fort Sill	2,594
St. s. Burnside	2,548	St. s. Coutlene	2,450	St. s. Fort Smith	2,594
St. s. Burnwell	5,771	St. s. Covalt	2,450	St. s. Fort Snelling	2,537
St. s. Bushong	2,848	St. s. Covedale	2,450	St. s. Fort Stevens	2,594
St. s. Bushrod	2,848	St. s. Covena	2,450	St. s. Fort Wayne	6,245
St. s. Butte	2,848	St. s. Coverun	2,450	St. s. Fort Wright	2,526
St. s. Buttonwood	2,848	St. s. Cowan	2,450	St. s. Freedom	5,640
St. s. Cabegon	6,107	St. s. Cowanshannock	2,532	St. s. Fresno	6,002
St. s. Cabrille	5,030	St. s. Cowardin	3,351	St. s. G. A. Flagg	3,299
St. s. Cabura	2,564	St. s. Cowboy	2,532	St. s. Galahad	6,241
St. s. Cadaretta	2,865	St. s. Cowee	2,507	St. s. Galesburg	5,138
St. s. Caddopeak	2,865	St. s. Coweta	2,551	St. s. Garfield	2,948
St. s. Calala	2,799	St. s. Cowiche	2,496	St. s. Garibaldi	2,873
St. s. Calaveras	2,379	St. s. Crabtree	2,496	St. s. Glendola	2,740
St. s. Calico-rock	2,379	St. s. Craigtownle	2,496	St. s. Glendoyle	2,740
St. s. Callispell	2,379	St. s. Craigmere	2,496	St. s. Glen Ridge	5,104
St. s. Callabassas	2,740	St. s. Craincreek	2,392	St. s. Glorieta	2,740
St. s. Callooh	3,017	St. s. Cranenest	2,292	St. s. Glymont	2,722
St. s. Calno	3,642	St. s. Crathorne	2,241	St. s. Glyndon	2,722
St. s. Calvert	4,298	St. s. Crawl Keys	2,308	St. s. Goodspeed	2,368
St. s. Cambridge	3,642	St. s. Craycroft	2,292	St. s. Goree	2,368
St. s. Canibas	6,846	St. s. Cruso	2,442	St. s. Governor John Lind	3,431
St. s. Canoga	5,575	St. s. Cumberland	2,551	St. s. Gray Eagle	2,978
St. s. Cansumset	5,990	*Sch. Cutler	1,322	St. s. Grayling	2,959
St. s. Cape Henry	4,992	St. s. Daca	2,579	St. s. Guaro	2,873
St. s. Cape Lookout	4,986	St. s. Dade County	3,658	St. s. Gullford	2,573
St. s. Cape May	6,867	St. s. Dalana	2,799	St. s. Gulmba	6,100
St. s. Cape Romain	4,992	St. s. Dalgada	2,469	St. s. Gunston Hall	6,182
St. s. Capines	2,531	St. s. Dallas	5,125	St. s. Haddon	3,642
St. s. Caponka	3,019	St. s. Dancy	2,559	St. s. Harish	2,551
St. s. Cascade	4,856	St. s. Daram	2,573	St. s. Hatteras	4,919
St. s. Casco	6,022	St. s. Darrah	2,553	St. s. Haverhill	2,551
St. s. Casmalla	2,551	St. s. Davidson County	3,642	St. s. Heffron	7,906
St. s. Casper	5,753	St. s. Decatur Bridge	3,658	St. s. Hegira	7,890
St. s. Castle Point	3,301	St. s. Deerfield	7,551	St. s. Henry Clay	8,166
St. s. Castle Town	3,328	St. s. Deer Lodge	6,284	St. s. Hickman	5,121
St. s. Castle Wood	3,304	St. s. Defiance	7,898	St. s. Hico	3,658
St. s. Catawba	3,129	St. s. Democracy	4,430	St. s. Hillsborough County	3,658
St. s. Cawler	2,551	St. s. Deranof	5,245	St. s. Hokah	2,551
St. s. Cedar Spring	2,343	St. s. Derbyline	7,149	St. s. Holbrook	3,019
St. s. Ceralvo	2,323	St. s. Derton	2,924	St. s. Homestead	6,861
St. s. Cerowco	2,323	St. s. Diablo	6,103	St. s. Honolulu	6,126
St. s. Cerro Gardo	2,323	St. s. Dio	5,312	St. s. Horado	3,353
St. s. Challenger	7,956	St. s. Dirigo	6,768	St. s. Houma	7,154
St. s. Chamberlain	2,323	St. s. Dochet	5,268	St. s. Hoven	7,156
St. s. Chamberlee	2,323	St. s. Donora	6,846	St. s. Hoxbar	7,156
St. s. Chantier	2,323	St. s. Dungeness	2,537	St. s. Hoxie	4,986
St. s. Chapparel	2,323	St. s. Duquesne	6,861	St. s. Huachuca	5,144
St. s. Chappell	2,323	St. s. E. C. Pope	2,787	St. s. Hugoton	7,048
St. s. Charlot	3,658	St. s. E. L. Doheny Third	7,753	St. s. Huguenot	6,964
St. s. Chattanooga	3,658	St. s. East Cape	5,812	Sch. Iberia	1,208
St. s. Chautauqua	2,323	St. s. Easterling	5,847	St. s. Ice King	4,737
St. s. Chebault	4,339	St. s. Eastern Chief	4,660	St. s. Ida	4,730
St. s. Cheron	2,543	St. s. Eastern Cross	4,576	St. s. Independence	7,893
St. s. Chestnut Hill	4,935	St. s. Easterner	5,806	St. s. Indianapolis	8,164
St. s. Chetopa	3,658	St. s. Eastern King	3,164	St. s. Ingold	3,658
St. s. Chiblabos	2,551	St. s. Eastern Light	7,192	St. s. Innoko	6,551
St. s. Chicago Bridge	3,658	St. s. Eastern Queen	5,797	St. s. Intan	6,126
Shp. Chillicothe	1,862	St. s. Eastern Sea	5,838	St. s. Invincible	7,888
St. s. Chimo	2,525	St. s. Eastern Shore	6,731	St. s. Ipswich	6,214
St. s. Chipchung	6,163	St. s. Eastern Star	4,330	St. s. Iris	2,858
St. s. Cicoa	1,588	St. s. Eastern Sun	5,851	St. s. Isanti	6,177
St. s. City of Fairbury	5,753	St. s. East Indian	8,183	St. s. Isonomia	3,901
St. s. City of Eureka	6,280	St. s. East Side	5,104	St. s. Issaquena	2,583
St. s. City of Spokane	6,427	St. s. Eastport	4,385	St. s. Itasca	2,537
St. s. Clairton	6,848	St. s. East Wind	5,843	St. s. Itompa	3,349
St. s. Clara	3,931	St. s. Eclipse	7,883	St. s. Jackson	3,658
St. s. Coaxet	6,155	St. s. Edellyn	8,716	St. s. Jacona	5,238
St. s. Coconino	3,013	St. s. Edenton	6,992	St. s. Jacox	2,740

U. S. Seagoing Merchant Vessels

St. s. Jeannette Skinner	5,715	St. s. Lake Flushing	2,592	St. s. Lake Mattato	2,338
St. s. Jefferson County	3,658	St. s. Lake Fluvanna	2,349	St. s. Lake Maurepas	2,242
St. s. Jekyl	3,658	St. s. Lake Flynn	2,592	St. s. Lake Medford	2,084
St. s. John M. Connelly	4,939	St. s. Lake Folcroft	2,592	St. s. Lake Michigan	2,020
St. s. Johnson City	3,658	St. s. Lake Fonda	2,592	St. s. Lake Mohonk	2,124
*Sch. Jonesport	1,322	St. s. Lake Fondulac	2,338	St. s. Lake Monroe	2,150
St. s. Kamezit	6,171	St. s. Lake Fontana	2,592	St. s. Lake Narra	2,387
St. s. Kanakee	2,594	St. s. Lake Fontanet	2,592	St. s. Lake Ogden	2,013
St. s. Kangl	2,573	St. s. Lake Forest	1,948	St. s. Lake Oneda	2,124
St. s. Kaskaskia	2,934	St. s. Lake Forkville	2,624	St. s. Lake Ontario	2,003
St. s. Kasota	3,017	St. s. Lake Forney	2,624	St. s. Lake Orange	1,991
St. s. Katonah	2,559	St. s. Lake Forsby	2,624	St. s. Lake Ormoc	2,368
St. s. Keketticut	6,171	St. s. Lake Fossil	2,624	St. s. Lake Oswega	2,416
St. s. Kenosha	2,548	St. s. Lake Fostoria	2,618	St. s. Lake Otisco	2,015
St. s. Keota	2,572	St. s. Lake Fouche	2,615	St. s. Lake Otisquago	2,337
St. s. Kewanee	3,550	St. s. Lake Foxboro	2,593	St. s. Lake Pachuta	2,416
St. s. Kickapoo	3,002	St. s. Lake Foxcraft	2,593	St. s. Lake Pearl	2,292
St. s. Kimta	2,556	St. s. Lake Fraichur	2,593	St. s. Lake Pepin	1,997
St. s. Kineo	2,573	St. s. Lake Fraley	2,593	St. s. Lake Pewaukee	2,167
St. s. Kishacoquillas	5,784	St. s. Lake Frampton	2,622	St. s. Lake Pickaway	2,339
St. s. Kismop	5,988	St. s. Lake Frances	2,016	St. s. Lake Pleasant	2,221
St. s. Kittegaum	6,126	St. s. Lake Franconia	2,621	St. s. Lakeport	2,028
St. s. Klamath	3,020	St. s. Lake Fray	2,622	St. s. Lake Saba	2,352
St. s. Knoxville	3,658	St. s. Lake Frazee	2,622	St. s. Lake St. Clair	2,308
St. s. Kokomo	2,594	St. s. Lake Frecks	2,622	St. s. Lake St. Regis	2,338
St. s. Kusdeca	2,551	St. s. Lake Freeborn	2,622	St. s. Lake Sanford	2,232
St. s. Kuwa	3,019	St. s. Lake Freed	2,622	St. s. Lake Sapor	2,592
St. s. La Forge	2,529	St. s. Lake Freeland	2,622	St. s. Lake Sebago	2,010
St. s. Lake Agomak	2,339	St. s. Lake Freezeout	2,622	St. s. Lake Shawano	2,177
St. s. Lake Akkra	2,368	St. s. Lake Frenchton	2,622	St. s. Lakeshore	1,976
St. s. Lake Allen	2,308	St. s. Lake Fresco	2,622	St. s. Lakeside	2,042
St. s. Lake Alvada	2,329	St. s. Lake Friar	2,622	St. s. Lake Silver	2,298
St. s. Lake Annette	2,177	St. s. Lake Frio	2,616	St. s. Lake Singara	2,715
St. s. Lake Arline	2,084	St. s. Lake Frohna	2,616	St. s. Lake Stirling	1,944
St. s. Lake Arthur	1,848	St. s. Lake Froloho	2,608	St. s. Lake Strabo	2,369
St. s. Lake Aurice	2,338	St. s. Lake Frugality	2,608	St. s. Lake Sunapee	2,007
St. s. Lake Beacon	2,338	St. s. Lake Frumet	2,608	St. s. Lake Superior	1,973
St. s. Lake Belnora	2,350	St. s. Lake Fugard	2,607	St. s. Lake Traverse	1,995
St. s. Lake Benbow	2,368	St. s. Lake Furley	2,607	St. s. Lake Tulare	2,005
St. s. Lake Benton	2,018	St. s. Lake Furlough	2,607	St. s. Lakeview	2,003
St. s. Lake Berdan	2,342	St. s. Lake Gakona	2,368	St. s. Lakeville	2,292
St. s. Lake Blanchester	2,346	St. s. Lake Galera	2,316	St. s. Lake Washburn	2,121
St. s. Lake Bledsoe	2,316	St. s. Lake Garza	2,331	St. s. Lake Weir	2,018
St. s. Lakebridge	1,977	St. s. Lake Gardner	2,292	St. s. Lake Wilson	2,150
St. s. Lake Buckeye	2,338	St. s. Lake Gasper	2,331	St. s. Lake Wimco	2,013
St. s. Lake Butler	1,948	St. s. Lake Gedney	2,333	St. s. Lake Winona	2,308
St. s. Lake Cahoon	2,339	St. s. Lake Geneva	1,998	St. s. Lake Winoski	2,416
St. s. Lake Callicoon	2,379	St. s. Lake George	2,486	St. s. Lake Winthrop	2,150
St. s. Lake Callstoga	2,379	St. s. Lake Gilboa	2,664	St. s. Lakewood	1,948
St. s. Lake Calvernia	2,364	St. s. Lake Gilpen	2,664	St. s. Lake Worth	2,080
St. s. Lake Canaveral	2,352	St. s. Lake Gilita	2,664	St. s. Lake Yahara	2,338
St. s. Lake Candelaria	2,352	St. s. Lake Globe	2,324	St. s. Lake Yelverton	2,332
St. s. Lake Cannonsburg	2,353	St. s. Lake Glencoe	2,324	St. s. Lake Yemassee	2,319
St. s. Lake Capens	2,026	St. s. Lake Gorin	2,368	St. s. Lake Ypsilanti	2,368
St. s. Lake Cathoon	2,319	St. s. Lake Gormanla	2,368	St. s. Lake Zalski	2,332
St. s. Lake Catherine	2,016	St. s. Lake Govan	2,343	St. s. Lancaster	7,699
St. s. Lake Cayuga	2,010	St. s. Lake Gradan	2,632	St. s. Laurel	4,296
St. s. Lake Champlain	2,046	St. s. Lake Grafton	2,630	St. s. Lehigh	5,753
St. s. Lake Charles	2,013	St. s. Lake Grainger	2,615	St. s. Lewiston	2,551
St. s. Lake Charlotte	2,239	St. s. Lake Grama	2,615	St. s. Liberator	7,951
St. s. Lake Charlottesville	2,364	St. s. Lake Grampian	2,615	St. s. Liberty	6,868
St. s. Lake Chalen	2,010	St. s. Lake Grampus	2,615	St. s. Liberty Glo	5,753
St. s. Lake Clear	2,054	St. s. Lake Granby	2,615	St. s. Liberty Land	5,753
St. s. Lake Como	2,018	St. s. Lake Grandon	2,611	St. s. Lithopolis	2,362
St. s. Lake Conesus	2,292	St. s. Lake Graphite	2,611	St. s. Lone Star	2,531
St. s. Lake Conway	1,948	St. s. Lake Gratis	2,611	St. s. Lonoke	2,540
St. s. Lake Copley	2,379	St. s. Lake Grattan	2,611	St. s. Lorain	6,429
St. s. Lake Crescent	2,054	St. s. Lake Gravella	2,611	St. s. Louisville Bridge	3,658
St. s. Lake Crystal	2,308	St. s. Lake Gravett	2,611	St. s. Luella	4,152
St. s. Lake Dancy	2,323	St. s. Lake Gravity	2,592	St. s. Luxpalle	5,753
St. s. Lake Daraga	2,371	St. s. Lake Greenbrier	2,592	St. s. Lydia	3,900
St. s. Lake Delancey	2,316	St. s. Lake Greenwood	2,150	St. s. Lynchburg	2,585
St. s. Lake Desha	2,338	St. s. Lake Greta	2,592	St. s. M. J. Scanlon	5,672
St. s. Lake Deval	2,329	St. s. Lake Grogan	2,592	St. s. McClellan	3,006
St. s. Lake Duane	1,948	St. s. Lake Hemlock	2,308	St. s. McKeesport	6,861
St. s. Lake Duncan	2,366	St. s. Lake Hewes	2,330	St. s. Magunkook	4,029
St. s. Lake Dummore	2,397	St. s. Lake Harney	2,013	St. s. Mahanna	3,016
St. s. Lake Dymor	2,357	St. s. Lake Harris	2,217	St. s. Mahaska	2,524
St. s. Lake Eckhart	2,330	St. s. Lake Helen	1,998	St. s. Mahnet	2,541
St. s. Lake Eliko	2,308	St. s. Lake Huron	2,080	St. s. Mahoning	2,341
St. s. Lake Elizabeth	2,337	St. s. Lakehurst	2,308	St. s. Maiden Creek	5,753
St. s. Lake Elkwater	2,730	St. s. Lake Inaba	2,622	St. s. Maine	6,547
St. s. Lake Elkwood	2,730	St. s. Lake Indian	1,991	St. s. Major Wheeler	3,431
St. s. Lake Ellenorah	2,730	St. s. Lake Janet	2,293	St. s. Makanda	2,999
St. s. Lake Elsinore	2,330	St. s. Lake Jessup	2,013	St. s. Manada	2,542
St. s. Lake Ennis	2,371	St. s. Lake Kytile	2,157	St. s. Matatanza	3,044
St. s. Lake Fannin	2,649	St. s. Lakekand	2,364	St. s. Marica	8,738
St. s. Lake Farabee	2,642	St. s. Lake Larga	2,371	St. s. Mariners Harbor	2,431
St. s. Lake Farber	2,638	St. s. Lake Lasang	2,371	St. s. Marne	6,868
St. s. Lake Faresman	2,592	St. s. Lake Ledan	2,369	St. s. Marshall	2,585
St. s. Lake Farge	2,624	St. s. Lake Lemando	2,370	St. s. Marshallfield	2,988
St. s. Lake Faristell	2,624	St. s. Lake Lesa	2,352	St. s. Maruba	2,637
St. s. Lake Farlin	2,581	St. s. Lake Licking	2,368	St. s. Masca	3,658
St. s. Lake Farmingdale	2,643	St. s. Lake Licoco	2,350	St. s. Masuda	4,844
St. s. Lake Farragut	2,606	St. s. Lake Lida	2,177	St. s. Mattapan	3,044
St. s. Lake Felicity	1,948	St. s. Lake Lillicusum	2,350	St. s. Mercer	6,868
St. s. Lake Fernwood	2,013	St. s. Lake Lillian	2,020	St. s. Meriden	2,722
St. s. Lake Festina	2,571	St. s. Lake Linden	2,150	St. s. Middlebury	2,585
St. s. Lake Festus	2,571	St. s. Lake Louise	2,242	St. s. Milton	2,551
St. s. Lake Fibre	2,571	St. s. Lake Marion	2,230	St. s. Milwaukee Bridge	3,658
St. s. Lake Flovilla	2,592	St. s. Lake Markham	1,998	St. s. Mineola	2,576
St. s. Lake Flume	2,592	St. s. Lake Mary	2,292	St. s. Minnesota	3,320

U. S. Seagoing Merchant Vessels

St. s. Mojave	2,545	St. s. Phoenix Bridge	3,658	St. s. Swampscott	2,551
St. s. Moline	2,967	St. s. Pipestone County	5,753	St. s. Tacony	1,962
St. s. Monana	3,658	St. s. Piqua	2,585	St. s. Tanka	2,563
St. s. Monasses	6,092	St. s. Plainfield	2,771	St. s. Teresa	3,769
St. s. Monmouth	5,125	St. s. Point Adams	2,671	St. s. Thala	2,799
St. s. Mono	3,131	St. s. Point Arena	2,117	St. s. The Lambs	6,861
Bk. Monongahela	2,782	St. s. Point Bonita	2,675	St. s. Tillamook	2,594
Bk. Montauk	1,467	St. s. Point Judith	2,670	St. s. Tipton	2,648
St. s. Montclair	4,773	St. s. Point Lobos	2,670	St. s. Toka	2,550
St. s. Montgomery	3,658	St. s. Point Loma	2,119	St. s. Tollard	6,244
St. s. Monticello	7,582	St. s. Polar Bear	4,297	St. s. Tolo	2,551
St. s. Montpeller	6,128	St. s. Polar Land	4,130	Shp. Tonawanda	1,745
St. s. Moraine	2,537	St. s. Polar Sea	4,120	St. s. Tripp	6,284
St. s. Morganza	2,469	St. s. Polar Star	4,297	St. s. Triumph	7,883
St. s. Moritz	3,019	St. s. Polybius	7,000	St. s. Tuckahoe	3,373
St. s. Morristown	5,138	St. s. Pontia	3,642	St. s. Tuckanuck	6,091
Bk. Moshulu	3,116	St. s. Poughkeepsie	6,207	St. s. Tunica	4,974
St. s. Moss Point	2,551	St. s. Princess Matolka	10,492	St. s. Tyee	2,551
St. s. Mulpusa	6,139	St. s. Proctor	2,324	St. s. Umatilla	2,573
St. s. Mount Evans	6,267	St. s. Prusa	5,784	St. s. Utoka	2,599
St. s. Mount Shasta	4,865	St. s. Puget Sound	4,838	St. s. Victorius	7,881
St. s. Mt. Vernon Bridge	3,658	St. s. Python	2,153	St. s. Vittorio Emanuele III	4,855
St. s. Muscantine	4,444	St. s. Quapaw	2,551	St. s. Volunteer	7,955
Shp. Muscota	2,660	St. s. Quemakoning	2,551	St. s. W. L. Steed	6,450
St. s. Musteto	3,044	St. s. Quidnic	3,004	St. s. W. S. Rheem	7,277
St. s. Mystic	6,214	St. s. Quinneseco	2,445	St. s. Wabash	5,673
*Sch. Nahant	1,289	St. s. Quinsult	2,531	St. s. Wachusett	4,336
St. s. Naiva	6,240	St. s. Quistconck	5,735	St. s. Waco	3,642
St. s. Nameaug	6,338	St. s. Quittacas	5,162	St. s. Wacouta	3,135
St. s. Namecki	2,525	St. s. Quoque	2,540	St. s. Wahkiakum	2,582
St. s. Nansemond	13,332	St. s. Radnor	7,699	St. s. Wakan	3,019
St. s. Nantahala	6,176	St. s. Rajah	2,329	St. s. Wakanna	2,541
St. s. Nantasket	5,769	St. s. Randolph S. Warner	3,289	St. s. Wakiki	2,531
St. s. Nashotah	2,594	St. s. Rappahannock	6,478	St. s. Wakulla	5,898
St. s. Natenna	3,343	St. s. Redlands	2,574	St. s. Walden	6,207
St. s. National Bridge	3,658	St. s. Redondo	4,113	St. s. Wallingford	2,302
St. s. Nawitka	3,349	St. s. Remus	5,162	St. s. Wallkill	3,642
St. s. Neabseo	3,353	St. s. Richmond Boro	5,268	St. s. Wallowa	2,799
St. s. Nedmac	5,753	St. s. Rock Island	2,966	St. s. Waupum	5,898
St. s. Neoiah	2,594	St. s. Roman	2,768	St. s. Waneyanda	2,590
St. s. Nemassa	2,551	St. s. Romulus	5,104	St. s. Wanzu	3,044
St. s. Neponset	7,822	St. s. Sabotawan	5,312	*Sch. Wasagya	2,259
St. s. Nesco	3,658	St. s. Sacandaga	5,735	St. s. Wasco	3,018
St. s. Neshaminy	6,126	St. s. Saccarappa	5,735	St. s. Wassale	6,000
St. s. Neuse	4,496	St. s. Sac City	5,735	St. s. Watauga	1,694
St. s. New Britain	5,268	St. s. Sachem	3,241	St. s. Watertown	6,435
St. s. Newburgh	6,099	St. s. Saco	5,784	St. s. Wathena	6,107
St. s. Newton	2,521	St. s. Sacramento	4,856	St. s. Watonwan	6,107
St. s. New Windsor	6,203	St. s. Sagadahoc	6,846	St. s. Waubesa	6,107
St. s. Norma	2,648	St. s. Sagaporaok	5,784	St. s. Wauconda	6,065
St. s. North Bend	3,009	St. s. Sag Harbor	2,413	St. s. Waukau	6,126
St. s. Northern King	2,599	St. s. Saguache	5,697	St. s. Waukegan	6,846
St. s. Northern Light	2,599	St. s. Sahale	5,784	St. s. Waukesha	2,585
St. s. Northern Queen	2,476	St. s. St. Augustine	3,658	St. s. Waxahachie	6,126
St. s. Northern Wave	2,599	St. s. St. Johns County	3,658	St. s. Wayucan	2,571
St. s. North Pine	3,599	St. s. Salmon	3,020	*Sch. Wellesley	1,306
St. s. North Pole	4,130	St. s. Saluda	5,784	St. s. Wenakee	2,576
St. s. North Wind	2,476	St. s. Salvation Lass	5,753	St. s. West Alcox	5,720
St. s. Nupolela	2,594	St. s. Sangamon	5,784	St. s. West Aleta	5,719
St. s. Nyanza	6,213	St. s. Santa Elisa	5,281	St. s. West Alek	5,573
St. s. Oakland	6,002	St. s. Santa Leonora	5,281	St. s. West Amargosa	6,044
St. s. Obak	2,469	St. s. Santa Malta	6,393	St. s. West Apaum	5,573
St. s. Oconee	2,554	St. s. Santa Tecla	2,576	St. s. West Arrow	5,852
St. s. Octorara	2,531	St. s. Santa Teresa	5,102	St. s. West Arvada	6,044
St. s. Oglethorpe	2,427	St. s. Sapinero	5,784	St. s. West Ashawa	5,642
St. s. Ogontz	5,753	St. s. Saranac	2,757	St. s. West Arenal	5,723
St. s. Okesa	2,551	St. s. Sarcoxie	5,784	St. s. Westboro	5,769
St. s. Okiya	2,573	St. s. Saris	2,554	St. s. West Bridge	5,818
St. s. Olen	5,311	St. s. Sataitia	5,784	St. s. West Brook	5,748
St. s. Oneco	2,571	St. s. Saucun	5,784	St. s. West Cajoot	6,036
St. s. Onekama	3,658	St. s. Saugerties	5,784	St. s. West Cape	5,619
St. s. Opelika	3,658	St. s. Saugus	5,784	St. s. West Carnifax	6,146
St. s. Opequan	3,658	St. s. Saxon	2,663	St. s. West Caruth	6,145
St. s. Oraton	2,563	St. s. Scantic	5,784	St. s. West Catanace	6,132
St. s. Orion	6,026	St. s. Schenectady	5,784	St. s. West Cavanal	6,128
St. s. Orizaba	7,652	St. s. Schodack	5,784	St. s. West Cawthon	6,121
St. s. Osage	4,807	St. s. Schoharie	5,784	St. s. West Cayote	6,107
St. s. Osakis	5,312	St. s. Schoodic	5,784	St. s. West Celeron	6,298
St. s. Osagumieck	6,152	St. s. Schroon	5,784	St. s. West Cellna	6,284
St. s. Osawatimie	6,340	St. s. Seattle Spirit	5,783	St. s. West Cherow	6,188
St. s. Osceola	6,241	St. s. Seekonk	5,784	St. s. Westchester	5,725
St. s. Oshkosh	4,056	St. s. Seneca	2,674	St. s. West Chetac	6,107
St. s. Oskaloosa	6,162	St. s. Sewickly	2,558	St. s. West Coast	5,688
St. s. Oskawa	6,100	St. s. Seypen	2,563	St. s. West Cobalt	6,179
St. s. Ossineke	5,577	St. s. Shaume	5,784	St. s. West Cohas	6,087
St. s. Ossining	5,166	St. s. Shenandoah	6,768	St. s. West Compo	6,188
St. s. Otsego	4,650	*Sch. Sherwood	1,281	St. s. West Conob	6,036
St. s. Overbrook	5,724	St. s. Shooters Island	5,123	St. s. West Corum	6,179
St. s. Owatama	2,531	St. s. Shortsville	3,658	St. s. West Cressey	6,091
St. s. Oyata	2,469	St. s. Siboney	7,652	St. s. West Durfee	6,087
St. s. Ozaukee	4,045	*Sch. Silverado	2,328	St. s. West Eagle	5,814
St. s. Ozette	6,181	St. s. Silvanus	2,202	St. s. West Ekono	6,086
St. s. Panga	2,551	St. s. Silverbrook	5,674	St. s. West Elcagon	6,084
St. s. Panola	3,658	St. s. Snug Harbor	2,388	St. s. West Elcasco	6,087
St. s. Pasadena	6,002	St. s. Sol Navis	8,713	St. s. West Eldara	6,087
St. s. Pascagoula	2,551	St. s. South Bend	8,738	St. s. West Erral	6,033
St. s. Passaic Bridge	3,658	St. s. South Pole	4,130	St. s. Westfield	5,666
St. s. Pawnee	4,471	St. s. Steadfast	7,883	St. s. Westford	5,620
St. s. Pawtucket	3,642	St. s. Strathnaver	5,268	St. s. West Galeta	6,000
St. s. Pequot	5,621	St. s. Sturgeon Bay	2,383	St. s. West Galoc	6,000
St. s. Philippines	11,440	St. s. Sutherland	4,855	St. s. West Gambo	6,087
St. s. Phoenix	5,731	St. s. Suwanee	8,428	St. s. West Gotomka	6,087

U. S. Seagoing Merchant Vessels

St. s. West Grama	6,047	St. s. Woonsocket	6,457	Westmoreland Coal Co., 224 South Third St., Philadelphia, Pa.:	
St. s. West Grove	5,815	St. s. Worcester	6,239	*Sch. Charles F. Prichard	861
St. s. Westhampton	5,832	St. s. Woyana	2,551	*Sch. Elk Garden	847
St. s. West Harcuvar	6,179	St. s. Wyandotte	4,761	*Sch. George R. Stetson	675
St. s. West Hardaway	6,179	St. s. Wynooche	6,065	*Sch. Horace A. Allyn	859
St. s. West Hargrave	6,280	St. s. Wytheville	6,551	*Sch. Irwin	1,304
St. s. West Harlan	6,267	St. s. Yaddin	1,685	*Sch. Larimer	1,584
St. s. West Harshaw	6,267	St. s. Yakima	2,523	*Sch. Manor	1,603
St. s. West Haven	5,699	St. s. Yaklok	6,150	*Sch. Osceola	1,621
St. s. West Helix	5,801	St. s. Yamhill	6,101	*Sch. Penn	1,849
St. s. West Hematite	5,778	St. s. Yaquina	6,100	*Sch. Westmoreland	1,593
St. s. West Hembrie	5,779	St. s. Yawah	2,551		
St. s. West Henshaw	5,780	St. s. Yellowstone	6,171	White, R. B., Salisbury, Md.:	
St. s. West Hepburn	5,779	St. s. Yesoking	6,241	Sch. Purnell T. White	751
St. s. West Hohomac	6,087	St. s. York Harbor	2,437	Whitehall Transportation Co. (Inc.), 108 West 130th St., New York, N. Y.:	
St. s. West Hosokie	6,087	St. s. Yosemite	6,149	St. s. Cape Cod	557
St. s. West Humhaw	6,087	St. s. Youngstown	6,849	White Oak Transportation Co., Searsport, Me.:	
St. s. West Imboden	6,179	St. s. Yucra	2,777	St. s. Bay State	1,245
St. s. West Indian	5,828	St. s. Yukon	4,843	St. s. Bay View	1,399
St. s. West Irmo	5,900	St. s. Yuma	1,766		
St. s. West Isay	6,366	St. s. Zaca	6,165	Whitney & Bodden Shipping Co. (Inc.), 822 City Bank Bldg., Mobile, Ala.:	
St. s. West Isleta	6,368	St. s. Zavalla	3,351	Bkn. Benecia	674
St. s. West Kasson	6,085	St. s. Zirkel	6,171	Sch. Ludlow	762
St. s. West Keene	6,067			Sch. M. Turner	816
St. s. West Kyska	6,198	United States Steel Products Co., 30 Church St., New York, N. Y.:		Sch. Schome	680
St. s. Westlake	5,852	St. s. Bantu	4,229	Sch. Stranger	640
St. s. Westland	5,832	St. s. Charlton Hall	4,749		
St. s. West Lashaway	6,087	St. s. Craster Hall	4,319	Whitney S. S. Corp., 11 Broadway, New York, N. Y.:	
St. s. West Lianga	6,222	St. s. Crofton Hall	5,773	St. s. H. M. Whitney	2,654
St. s. West Loquassuck	6,087	St. s. Howick Hall	5,096	Whittemore Navigation Corp., Charles, 220 West 42d St., New York, N. Y.:	
St. s. West Madaket	6,087	St. s. Saint Francis	5,102	Sch. Charles Whittemore	693
St. s. West Mahomet	6,087	St. s. Santa Rosalia	5,409	Willamette S. S. Co., Fife Bldg., San Francisco, Cal.:	
St. s. West Maximus	6,087			St. s. Willamette	903
St. s. Westmead	5,618	Vacuum Oil Co., 61 Broadway, New York, N. Y.:		Wilmington Steamboat Co., Foot of 4th St., Wilmington, Del.:	
St. s. West Modus	6,188	Ga. s. Blyonne	1,110	St. s. City of Camden	730
St. s. Westmoreland	6,831	Ga. s. Brumell Point	3,359	St. s. City of Chester	611
St. s. Westmount	5,584	St. s. Charles M. Everest	5,579	St. s. City of Philadelphia	749
St. s. West Munham	6,179	St. s. Garzoyle	4,433	St. s. City of Wilmington	749
St. s. West Nohno	6,298	St. s. Olean	2,783	Wilmington Transportation Co., Wilmington, Cal.:	
St. s. West Nosska	6,267	St. s. Paulsboro	6,966	St. s. Cabrillo	611
St. s. West Point	5,724	Vance, J. W., San Francisco, Cal.:			
St. s. Westpool	5,724	Bkn. Retriever	547	Wilson, Henry, 112 Market St., San Francisco, Cal.:	
St. s. Westport	5,571	Vestkysten Shipping Corp., 27 William St., New York, N. Y.:		St. s. Idaho	1,047
St. s. West Quechee	6,280	Ga. s. Pauline	1,750	St. s. Oregon	989
St. s. West Sequana	6,128	Viking Shipping Co., 808 Wilcox Bldg., Portland, Oreg.:		St. s. Svea	618
St. s. Westshore	5,831	Ga. s. Astoria	1,611	Wilson Fisheries Co. (Inc.), 2701 Smith Bldg., Seattle, Wash.:	
St. s. West Tacook	6,298	Vindal Co. (Inc.), 50 Broad St., New York, N. Y.:		Ga. s. Apex	785
St. s. West Tozus	6,188	St. s. Vindal	1,290	Winett Operating Co. (Inc.), 79 Broad St., New York, N. Y.:	
St. s. West Totant	6,280	Vizard, William, Mobile, Ala.:		St. s. Owego	3,069
St. s. West Vaca	5,629	Ga. s. Alla G. Turner	677	Wood, W. H., 1 Drumm St., San Francisco, Cal.:	
St. s. West View	5,871	Wahkeena S. S. Co., San Francisco, Cal.:		St. s. Claremont	1,291
St. s. Westward Ho	5,814	St. s. Wahkeena	1,030	St. s. San Diego	1,487
St. s. West Wauna	6,188	Wapama S. S. Co., 1 Drumm St., San Francisco, Cal.:		St. s. Solano	943
St. s. West Waunake	6,179	St. s. Wapama	951	Wood Lumber Co., E. K., 112 Market St., San Francisco, Cal.:	
St. s. West Wind	5,814	Warren Transportation Co., 35 Congress St., Boston, Mass.:		Sch. Alert	623
St. s. Westwood	5,612	St. s. Matoa	2,311	Sch. Dauntless	548
St. s. West Zeda	6,188	Webb, Charles F., 110 State St., Boston, Mass.:		Sch. Defiance	604
St. s. West Zula	6,000	Sch. Hesper	1,348	Sch. Fearless	736
St. s. West Zucker	6,000	Sch. Luther Little	1,234	Sch. Fred J. Wood	681
St. s. Western Ally	5,860	Weidner, David, 656 St. Nicholas Ave., New York, N. Y.:		Ga. s. Lassen	717
St. s. Western Belle	5,698	St. s. Berkshire	2,014	Sch. Resolute	684
St. s. Western Chief	5,869	St. s. Pathfinder	2,792	St. s. San Jacinto	614
St. s. Western Comet	5,828	Welch-Fairchild & Co. (Inc.), New York, N. Y.:		St. s. Shasta	878
St. s. Western Cross	5,778	Ga. s. Elvira Stolt	812	Ga. s. Sierra	1,034
St. s. Western Front	5,742	Wells, Robert F., Stony Brook, N. Y.:		St. s. Siskiyou	884
St. s. Western Glen	5,831	Sch. Van Lear Black	634	St. s. Tamalpais	574
St. s. Western Hero	5,564	Wergeland Motorship Co., Wilcox Bldg., Portland, Oreg.:		Woodin Transportation Corp., 165 Broadway, New York, N. Y.:	
St. s. Western Hope	5,676	Ga. s. Wergeland	2,457	Sch. W. H. Woodin	1,488
St. s. Western King	5,659	Western Fuel Co., 430 California St., San Francisco, Cal.:		Bk. C. D. Bryant	929
St. s. Western Knight	5,834	*Sch. Acapulco	2,436	Wooten, Orlando V., Bethel, Del.:	
St. s. Western Light	5,869	Western Mercantile Marine Co., 110 Market St., San Francisco, Cal.:		*Sch. Charles S. Hearne	657
St. s. Western Maid	5,871	St. s. Charles Christenson	839	Wrightson, Walter, Ashland Place, Mobile, Ala.:	
St. s. Western Ocean	5,869	Western Transport Co. (Inc.), 430 Sansome St., San Francisco, Cal.:		Sch. Copperfield	691
St. s. Western Plains	5,688	St. s. Eldorado	2,310	Veilowstone Navigation Co., 1 Drumm St., San Francisco, Cal.:	
St. s. Western Pride	5,853	Western Union Telegraph Co., 195 Broadway, New York, N. Y.:		St. s. Yellowstone	767
St. s. Western Queen	5,871	St. s. Robert C. Clowry	532		
St. s. Western Scout	5,813	West India Sugar Corp., 911 Munsey Bldg., Baltimore, Md.:			
St. s. Western Sea	5,869	St. s. Augusta	1,968		
St. s. Western Spirit	5,869				
St. s. Western Star	5,832				
St. s. Western Wave	5,699				
St. s. Westerner	6,867				
St. s. Wheaton	2,537				
St. s. Whahri	7,204				
St. s. Wilhelm Jebesen	5,237				
St. s. Willimantle	1,327				
*Sch. Winnegance	6,128				
St. s. Winyah	3,656				
St. s. Wisconsin Bridge	2,924				
St. s. Wshkah	3,642				
St. s. Woodmansie					

Official records of Sept. 1 show that 2884 vessels of 500 tons and over, aggregating 8,554,714 gross tons, were then under the American flag.

Activities in the Marine Field

Latest News From Ships and Shipyards

Cuyahoga Channel to be Dredged

DEFINITE assurance that the federal government will improve and establish a channel in the Cuyahoga river, deep enough to permit deep-draft vessels to navigate it, was received by the city planning commission of Cleveland recently. According to the communication received by Richard Harburger, secretary of the commission, from the United States engineers, the government also is considering the establishment of a large harbor at the river's mouth. Authority for the river and harbor improvements already has been given by congress, according to the United States engineers, and the city planning commission has been asked to furnish specific information of the improvement desired by the city of Cleveland. The commission has authorized its two technical advisers, Frank R. Walker and R. H. Whiton, to begin work with Robert H. Hoffman, city engineer, to collect data on the proposed river improvements and to submit them at the commission's next meeting. Later they will be forwarded to the federal engineers at Washington.

The steamers HERBERT K. OAKES and the MARTIN MULLEN were in collision on Lake Superior between Portage and Ashland, July 7, 1916 and in March, 1917, Judge Tuttle, Detroit, held both boats at fault and divided the damages. The case was appealed by both sides and the court of appeals at Cincinnati, on Oct. 8, affirmed Judge Tuttle's decision. The damage on the MULLEN amounted to \$23,489 while repairs on the OAKES cost \$24,084.

Recently it was announced by A. E. R. Schneider that the Paisley Steamship Co. and James Playfair interests have purchased the steamer CICOA from the United States shipping board. The same parties bought the steamer F. P. JONES some time ago. The boats are at present on the Atlantic coast where they will probably be operated next winter. The CICOA formerly was the JOHN SHARPLES.

The steamer GLENSTRIVEN which is in drydock at Port Arthur, Ont., has 17 plates on her starboard side to come off and 39 damaged frames to repair. It will take about three weeks to refit the vessel.

In the near future, the report of the engineers' commission is expected to be made public, outlining the development of the St. Lawrence river and the establishment of water power sites on the Great Lakes jointly by the United States and Canadian governments, according to Sir Adam Beck,

chairman of the Ontario hydroelectric commission. Engineers have been at work on the survey for three years. Their findings will be laid before the international joint commission which is to take up the entire project.

The wreck of the steamer FRANK O'CONNOR, which was destroyed by fire recently, went down in 17 fathoms of water about 20 miles off Sturgeon bay. The vessel carried a cargo of hard coal and was bound from Buffalo to Milwaukee.

The steamer LAKEWOOD has left for the Atlantic coast where she will be operated in the coastwise trade. The LAKEPORT, of the same fleet, will also be taken to salt water. Capt. Frank Peterson is manager of the vessels.

The steamer THOMAS WALTERS, which grounded in a fog on Pipe island recently, was released after lightering part of her cargo of coal.

The tug J. L. MINOR of Detroit was badly damaged by fire at Port Huron, early in October. It is reported that she is a total loss.

The steamer A. T. KINNEY, which was ashore at Crab island shoal, has completed repairs at the Toledo Shipbuilding Co., Toledo. The company also has completed repairs on the J. S. MORROW.

The steamer ROBERT FULTON has been taken off for the season. She is to have two new boilers installed in her at Detroit before the opening of the 1920 navigation season.

The Lake Carriers' association has posted bulletins reducing the recommended draft for Vidal shoals, Lake St. Clair, Fairport, Ashtabula, Conneaut and the docks in the outer harbor at Buffalo to 20 feet, 4 inches. This is a reduction of 4 inches from the draft of 20 feet 8 inches, which has been in force since June. The lake levels have been receding since July. There have been no serious groundings but it was decided as a precautionary measure to reduce the draft.

The new steamer LAKE FISCUS, built at Superior, Wis., for the Emergency Fleet corporation, passed her sea trial successfully after which she proceeded to the lower lakes.

The passenger steamer FRANK E. KIRBY of Detroit arrived at Sandusky on Sept. 27 on her last trip for the season after which she cleared for her home port where she went into winter quarters.

Failure of the Marblehead peninsula and Lake Erie island section peach crop was responsible for laying up the vessel three weeks earlier than usual.

The steamer W. T. ROBERTS, which underwent repairs at Cleveland, had 21 plates to come off her forward end. The work required 10 days to complete. She was in collision with the steamer SHENANGO which was docked for repairs at Lorain, O.

The Emergency Fleet corporation has sent the following notice to all shipbuilders on the Great Lakes having government contracts as a result of a conference held between representatives of the fleet corporation and the navy department in regard to wage scales at navy yards and shipbuilding plants doing government work: "In view of the decision of President Wilson in the case of railroad employes that the general subject of readjustments in existing wage scales be deferred pending efforts being made at the present time to bring the cost of living down to normal, and in view of the general desire to take no action which would in any way interfere with the return to more normal conditions throughout the country, it has been decided to continue the existing scale paid in navy yards and shipbuilding plants doing government work in effect after Oct. 1. This scale is the last of the so-called Macy board awards and applies to the east and west coasts, the Great Lakes and the Gulf."

A 70-mile gale at the Portage canal late in September blew down the weather bureau signal tower.

A spectacular launching took place at the yards of the Ohio Shipbuilding Co., Cleveland, Sept. 21, when the steel trawler PENGUIN took the water. As the vessel started toward the water, the after end stuck slightly, so that the forward end slid into the water first. This caused the craft to hang over the launching ways for some little time before she was released. The vessel sustained slight damage to her rudder stock and propeller, which necessitated her being placed in the company's No. 2 drydock for repairs. The PENGUIN is 151 feet long with a 26-foot beam and is building for the East Coast Fisheries Co., New York. She will leave for the coast about Nov. 1 and will operate out of Boston.

The Cleveland & Erieau Steamship Co. recently announced that beginning Sept. 25 an all-winter freight and passenger

service would be maintained between Cleveland and Port Stanley, Ont.

* * *

The fourth lock of the St. Mary's ship canal was formally opened to commerce on Sept. 18. This lock is called Sabin lock in honor of Louis C. Sabin, general superintendent of the canal. The first boat to enter the lock at the opening ceremonies was the tug GEN. G. J. LYDECKER bearing Col. E. M. Markham, Col. J. G. Warren, L. C. Sabin

and others. Next in order followed the tug L. C. SABIN and the steamer WILLIAM LIVINGSTONE. President Livingstone of the Lake Carriers association and party from Detroit and Cleveland were present at the opening. The forth lock was begun in 1913 and has cost the government nearly \$3,000,000.

* * *

The American Shipbuilding Co.'s Lorain, O., yard recently launched the steamer ASHLAND COUNTY which is

building for the Emergency Fleet corporation. She is 261 feet long, 43 feet beam and 28 feet deep.

* * *

Capt. Jesse Brooks, Norwalk, O., calls attention to the fact that when the tug SANDUSKY was sunk off Sandusky harbor, he was not in charge. Captain Brooks brought out the tug in the fall of 1912 and was in charge during the remainder of that season and during part of 1913.

Late News From Atlantic Seaboard

AT THE Fore River plant of the Bethlehem Shipbuilding Corp., 1200 men were recently laid off, the reason being given as lack of work. It is rumored that this was due to the situation in the steel industry, for other reports indicate enough work ahead for 10,000 men for a year and a half.

* * *

At the Charlestown navy yard, East Boston, Mass., workmen are being laid off on account of the gradual reduction in government work. The men who are laid off have the privilege of being transferred to Pacific coast navy yards.

* * *

The new steel steamer BABBOOSIC has just been completed at Portsmouth, N. H., for the United States shipping board. She is a modern transport, 8800 tons, and will enter the service of the Atlantic Transport line between Boston and London, England.

* * *

The BUELAH MAE, recently completed at Essex, Mass., for W. T. Hollett, Burim, N. F., has just been put into the regular cargo service between Boston and Newfoundland and will be used exclusively as a collier.

* * *

The United States destroyer CASE was recently launched at the Squantum plant of the Bethlehem Shipbuilding Corp. This is the first of 26 similar vessels which are to be launched at this plant. Mineral water was used in place of champagne at the christening.

* * *

The French steam trawler MANUEL, which has been working in the fishing trade out of North Sydney is now returning to her home port in France after a successful season, with a total catch of 900,000 pounds of cod fish to her credit.

* * *

The United States submarine chaser 130, which sank at its moorings in Boston harbor during a storm, has been successfully raised by use of slings and bridles placed by divers and with the assistance of powerful cranes on lighters and on shore.

* * *

The Great Round Shoal lightship, which for years has been guarding the coast north of Boston, is now at the Winnisomet shipyard, Chelsea, Mass.

undergoing extensive repairs and alterations.

* * *

The steamers maintaining the Boston to New York all-water service are to be changed over at once to burn oil instead of coal.

* * *

American manufacturers and exporters have been giving considerable attention to Manchester, England, as a receiving port for American products and an agitation has been started among New England shippers toward the development of a new transportation line between Boston and that port.

* * *

At the Squantum plant of the Bethlehem Shipbuilding Corp., the U. S. destroyer LARDNER was launched early this month.

* * *

The action of the United States government in suspending shipping between this country and the United Kingdom, on account of the strike on British railways, caused a congestion of freight and boats at Boston. The steamer HOSOKI loaded and ready to leave for London was held up for more than a week, and the steamer BABBOOSIC which has been awaiting a general cargo for London has cancelled its sailing date. British steamers however continued to sail according to schedule.

* * *

The old steamer NANTUCKET, formerly of Nantucket, Mass., has been wrecked on a ledge near Poughkeepsie, N. Y., on the Hudson river. She was built in 1886 and was kept in continuous service between Nantucket and the mainland for 30 years before she was sold to New York parties.

* * *

Passenger and freight service from Portland, Me., to the islands of Casco bay has been discontinued by the Casco Bay and Hartswell lines.

* * *

The East Coast Fisheries Co., Portland, Me., has contracted for five new trawlers which will be added to its fleet. The purchase of some British trawlers is also contemplated.

* * *

"How to increase the export tonnage through the port of Boston" was the subject of a talk recently by Paul T. Cherington at the weekly luncheon of the Boston Shoe Trades club. "We

must raise a fund," he said, "for the purpose of soliciting, outside New England, freight for export through our harbors. It is only in this way that bulk cargoes, essential to foreign steamship lines, can be secured."

* * *

Two destroyers are being built at Squantum, Mass. These are the WARDEN and FLUSSER. Four other destroyers planned for construction at this yard have been struck from the list by the government.

* * *

During September, there arrived at Boston from foreign countries 73 steamers, 19 schooners and one barge, a total of 93 vessels as against a total of 53 for the corresponding month of last year.

* * *

Sea service recruiting headquarters has recently been established at Newport News, Va., and the recruiting steamer UTOKA, formerly stationed at Boston, has been called to that port.

* * *

Steamers leaving Boston for ports in Europe are taking coal for the round trip on account of uncertainty of procuring fuel at their destination as a result of the railroad strike in England. The WINIFREDIAN, Leyland line, left for Liverpool as usual in spite of the strike conditions.

* * *

The Morse Dry Dock & Repair Co., Brooklyn, N. Y., now has in commission the fifth section of its new 30,000-ton floating drydock. This equipment enables the company to raise vessels of over 24,000 tons and 625 feet long. The sixth and last section of the dock will be in place shortly. The company announces that it has not been bought by the government as lately rumored.

* * *

The steamer MERRY MOUNT was launched by the Groton Iron Works, Groton, Conn., on Sept. 20. The vessel was sponsored by Mrs. George F. Hall.

* * *

Creditors of the Pusey & Jones Co., Gloucester City, N. J., have received notice from the company asking for an itemized statement of all claims to Sept. 1 and for prompt statements for each month in the future. The company states that all bills will be paid at once. This action on the part of

the company is taken to show that a settlement has been reached with the shipping board regarding the control of the plant.

* * *

Patronage on the two vessels of the Eastern Steamship lines, running between Boston and New York via the Cape Cod canal, continues good and the service will be maintained as long

as traffic warrants. Present indications are that the boats will be converted into oil burners before the opening of the 1920 navigation season.

* * *

The steamer LAKE SINGARA left Portland, Me., recently without a second mate as it was impossible to ship one on short notice. Permission to sail in such cases is granted by the federal

authorities. Ships' officers are often hard to find on the eastern coast, due to the number of vessels constantly going into commission. This situation opens an excellent opportunity to young men of ambition to secure lucrative positions at sea. Never in the history of the American merchant marine has it been easier to rise rapidly to a captain's berth than it is at the present time.

Up and Down the Pacific Coast

FOREIGN countries are in the market for steel steamers but owing to the low rate of exchange and disturbed financial conditions, it has been impossible for the yards on the Pacific coast to accept any of the business offered. Buyers in European countries want tonnage and they want it urgently. However, they are not in position to make prompt payments and Pacific coast yards cannot finance contracts based on such long deferred payments. There is a prospect that much business of this nature can be placed just as soon as satisfactory financial arrangements can be made. Such contracts are being sought now that the end of the shipping board's building program is approaching.

* * *

According to a recent announcement a large graving dock is to be built at Vancouver, B. C., by J. Coughlin & Sons. This firm has been engaged in constructing 8800-ton steel steamers for the British government. It is stated by the same source that the Coughlin yards will discontinue building tonnage for the government but will continue construction of 9000 and 10,000-ton deadweight steel steamers on its own account to be disposed of upon completion. The plant will add the large dock as a part of the equipment, the site adjoining the shipyard having already been acquired. The improvement will receive the benefit of the government drydock subsidy act.

* * *

Under authority of the Seattle central labor council Seattle longshoremen have refused to load a shipment of arms and ammunition which was booked for Vladivostok on the shipping board's steel steamer DELIGHT. This action was taken because of the sympathy expressed by local union labor for the Bolsheviks. The workers proceeded loading other cargo on the same vessel but declined to touch rifles and ammunition consigned to the Russian mission. Five carloads of this cargo remain on the pier, untouched.

* * *

The steel steamer LAKE SANFORD, built in 1918 by the Great Lakes Engineering Works, Ashtabula, O., is at present on Puget sound after having brought a cargo of ore from the west coast to the Tacoma smelter. After undergoing cleaning and painting at the Todd Dry Docks, Inc., Seattle, LAKE SANFORD was turned over to W. R. Grace & Co., who have booked a full cargo of rice,

lumber and flour for Cuba. The steamer made a fine run out from the Atlantic coast via South America.

* * *

Henry G. Seaborn, vice president of the Skinner & Eddy Corp., Seattle, has purchased the 4-mast schooner CAMANO, built at Port Blakely in 1902. The CAMANO registers 730 tons, gross, and has capacity for 900,000 feet of lumber. Mr. Seaborn has been quite an active operator in sailing vessels on the Pacific coast. He recently succeeded David Rodgers as general manager of the Skinner & Eddy plant.

* * *

The first bulk cargo of molasses ever discharged at Seattle has just been brought by the ship MARION CHILCOTT, which came up from Honolulu. The ship is a tanker and she discharged into oil tanks in this port. The cargo was slightly heated so that it pumped out easily. The molasses will be shipped overland in tank cars and will be used for cow feed.

* * *

Commerce between Seattle and San Francisco by water has practically been discontinued because of the strike of longshoremen at the latter port. The stevedores have made extremely drastic demands which operators state they cannot consider. Among the original demands of the men were that they be given a 25 per cent share of the dividends declared by the Pacific Steamship Co. and a 10 per cent ownership in all Admiral line property. Some of these demands have since been modified but in the meantime the Pacific Steamship Co. has withdrawn its vessels from San Francisco and no freight is being handled by water between Puget sound and that port. In addition, the San Francisco waterfront workers have demanded an increase to \$1 an hour, straight time, and \$1.50 an hour overtime. Passengers are still being carried by water to San Francisco and freight to other Californian ports. However, there is at present a freight embargo against San Francisco because of the attitude of the longshoremen.

* * *

Todd Dry Docks, Inc., have turned over the 7500-ton steel steamer DELIGHT to the shipping board and this vessel is now loading her maiden cargo for Vladivostok. The DELIGHT was built at the old Seattle Construction & Drydock Co.'s plant and completed at the Todd dry docks. The steamer

GAFFNEY, built at the same plant, is about ready for delivery to the Emergency Fleet corporation. The steamer ZAREMBO, built at the Todd yards, Tacoma, Wash., is being completed. The Todd drydocks have been exceptionally busy. A large repair and overhauling job on the steamer GOVERNOR is now under way. The steamer LAKE SANFORD has recently been in dock and several shipping board vessels are receiving attention. The steamer ADMIRAL RODMAN is also at the Todd plant having a broken shaft replaced.

* * *

Because of a strike of mill and cereal workers at Portland, Oreg., the dispatch of several cargoes of flour has been delayed, union longshoremen having refused to handle the flour in sympathy with the strikers. The matter has now been adjusted but for some time there was a general cessation of milling and in the movement of grain from the interior.

* * *

Announcement by officers of the Norway Pacific Construction & Drydock Co., which recently built a construction plant at Everett, Wash., is that work on a large floating drydock will be commenced as soon as the plans are approved by the navy department. This dock will consist of six pontoons. Its length will be 1100 feet and its lifting capacity 20,000 tons. This company has received contracts for building five coast guard cutters. Negotiations are also under way for building five cargo steamers for Norwegian interests. Two of the coast guard cutters will be equipped by the General Electric Co. with direct electric drive instead of reciprocating engines.

* * *

When the 4-mast wooden schooner BIANCA was launched at the plant of the Elliott Bay Shipbuilding Co., Seattle, the LITTLE BIANCA followed immediately down the ways. The latter vessel is a small power launch which is to be carried on the schooner's deck and in calm weather or when approaching port it is to be placed in the water to act as a towboat and tender for the larger craft. By this plan it is expected to cut towage expenses. With these launchings, the Elliott Bay Shipbuilding Co. completed its program of construction and the yard will shortly cease operations, unless new work is obtained in the meantime. The BIANCA is chartered to carry 2,000,000 feet of lumber to India.

Equipment Used Afloat, Ashore

Platen Vise for Drilling and Reaming—Power Hammer for Shipyard Work—Modern Ships' Range Designed for Heavy Duty

IN DRILLING and reaming machine parts, means for clamping the work on the drill press platen must frequently be provided. This procedure involves hunting up bolts and straps to say nothing of the time consumed in locating the pieces in position for the machining operation. The device shown in the accompanying illustration recently was designed by the Sprague-Hayes Mfg. Co., Detroit, to furnish a ready means for holding work on the drill press for drilling and reaming.

The device in general design resembles a milling machine vise with the difference that the top is circular and finished like a drill press platen. The back jaw is stationary while the front jaw is actuated by means of a substantial square-threaded screw. The jaws that hold the work are case hardened to protect them from undue wear and finished by grinding to insure accuracy. Special jaws for holding odd-shaped pieces can readily be substituted for the plain jaws as used

in ordinary milling machine practice. As the device can be rotated on its center and swung in an arc under the drill press spindle, the work is readily centered after the method used in ordinary drill press practice. When the jaws are closed together the device forms an ordinary drill press platen. The front or movable jaw, is equipped with ample bearing slides and is provided with gibs for taking up wear.

Power Hammer

The hammer shown in the accompanying illustration is a recent development of the United Hammer Co., Boston, and is said to be particularly adapted to shipyard work. A novel feature of this tool is the heavy guard that surrounds the working parts, thus protecting the operator from possible accidents. The guard is devised to comply with safety laws enacted by several states. It is equipped with a door at the front so that the working parts are easily accessible for oiling and inspection.

The hammer is operated by an adjustable crank which permits the operator to lengthen or shorten the stroke as occasion requires. Motion is applied to the hammer head through the medium of a connecting rod which carries a crosshead connected to the hammer head by means of links. To obtain an elastic blow, a heavy spiral spring is used. This, it is pointed out, lessens the danger of breakage and also prevents undue shock to the machine. The arrangement is said to give a quick, sharp blow which is effective in forging work.

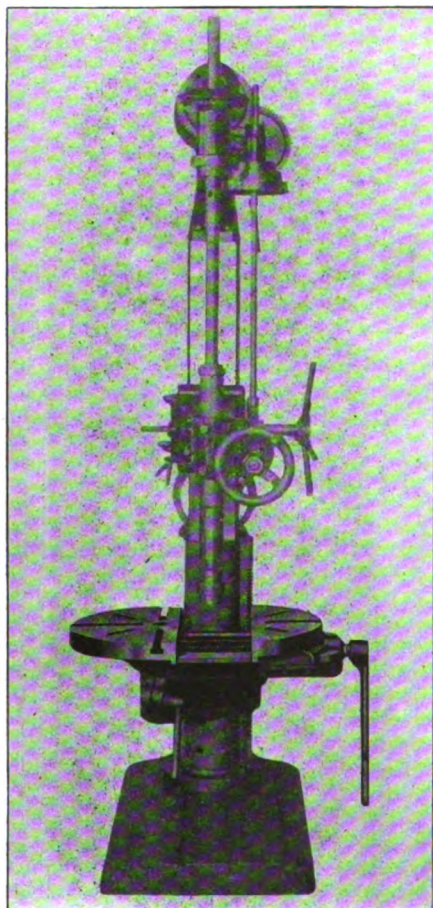
The main frame is a 1-piece casting arranged with a circular opening at the back opposite to the face of the dies. This enables the operator to run long stock through the dies when necessary. The shaft journals are cast integral with the frame which assures proper alignment at all times. The frame is proportioned to withstand the strain set up by heavy blows in forging. The anvil base is fastened to the main frame through the medium of steel straps held in place by nuts. The hammer can be driven from a line shaft or it may be equipped with individual motor drive.

These hammers are made in several sizes from 25 to 500 pounds. The 500-pound size occupies a floor space of 40 x 53 inches and runs at a maximum speed of 175 blows a

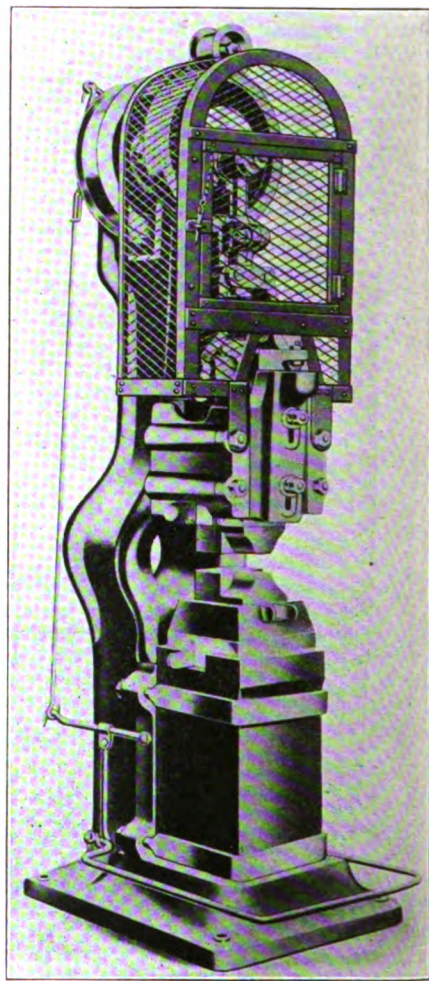
minute. With a 11½-inch stroke, it is adapted to work 6-inch rounds or squares. This size hammer weighs approximately 9800 pounds.

Ships' Range

The range shown in the accompanying illustration is a development of the Bramhall, Deane Co., New York, designed for heavy duty. It is equipped with either hard or soft coal grates and a double plate shelf, its entire length being 7 feet. Two fire chambers are



THIS DRILL PRESS PLATEN IS EQUIPPED WITH JAWS FOR LOCATING THE WORK TO BE MACHINED



POWER HAMMER FOR SHIPYARD WORK

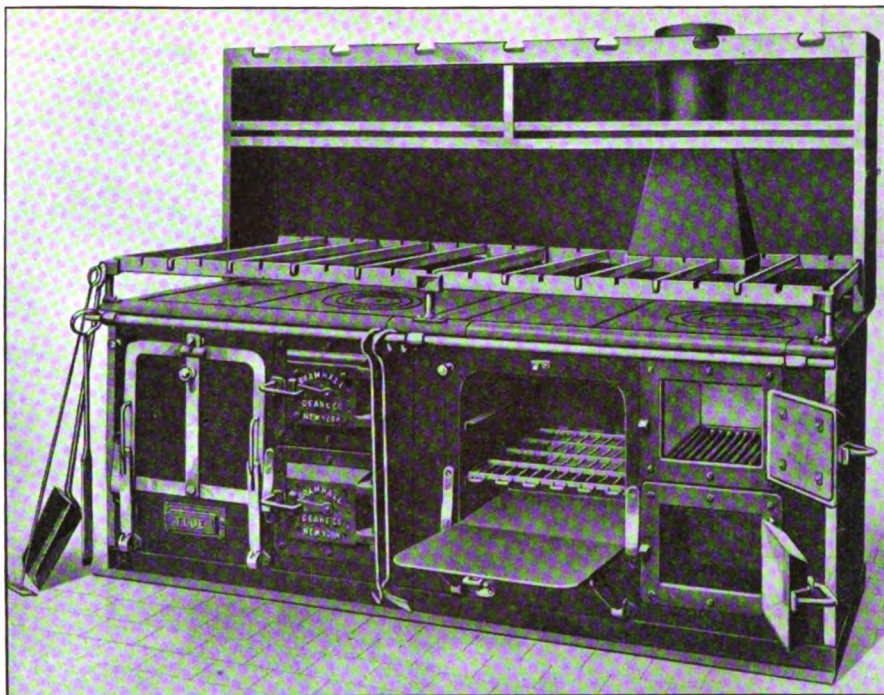
provided. These are of ample dimensions and are lined with fire brick. In the construction of this outfit, rust resisting steel is used to a great extent. It is pointed out that the cooking surface is heavily proportioned to withstand the action of hot fires for continued periods. The top of the range is equipped with the usual racks to prevent cooking utensils from sliding

off during heavy weather. The cross bars are adjustable to accommodate kettles, etc., of varying capacities.

Over each fire chamber is a plate with reducing rings and cover, while long oblong plates are located over the ovens. These are readily removed and are interchangeable. The plate shelf is made of heavy material, the edge of the upper shelf being notched to accommodate saucepan handles. The lower shelf is divided into two 3½-foot sections and has an iron guard rail to prevent utensils from falling.

The bottom of the range is equipped with an angle-iron base which is recommended where the galley deck is steel, tile or concrete. It is to prevent dirt from accumulating under the range and the ovens from being affected by drafts.

Among well known steamships and transports equipped with the company's ranges are the following: AMERICA, CITY OF SAVANNAH, COMMONWEALTH, EDWARD LUCKENBACH, GEORGE WASHINGTON, HARVARD, YALE, KROONLAND, LEVIATHAN, NEW YORK and St. Louis.



COMPACT GALLEY RANGE MADE OF HEAVY SECTION MATERIAL—THIS UNIT IS MADE TO BURN HARD OR SOFT COAL

Business News for the Marine Trade

Capitalized at \$100,000, the J. V. B. Engine Co., Akron, O., recently was incorporated by Joseph Van Blerck and others.

The California Diesel Engine Mfg. Co., San Francisco, capitalized at \$50,000, has been incorporated by George Clinger, John A. Roberts and T. C. Moore.

Erection of a plant addition is reported being contemplated by the Perth Amboy Dry Dock Co., Perth Amboy, N. J.

Erection of a carpenter shop, two stories, 40 x 120 feet, is being contemplated by the Simpson-Patten Dry Dock Co., East Boston, Mass.

Contracts have been awarded by the Winnisimmet Ship Yard, Inc., Chelsea, Mass., for the erection of a shipbuilding plant.

Erection of extensions to be built on a 40-acre tract adjoining its plant, are being contemplated by the Union Shipbuilding Co., Fairfield, Md.

Purchase of a site on the Detroit river at Trenton, Mich., has been effected by the Purdy Boat Co. The company is capitalized at \$75,000.

The bureau of yards and docks, navy department, Washington, is planning the construction of a pattern shop at the navy yard at Norfolk, Va.

Incorporation of the Ronale Shipping Corp., New York, has been effected by W. Chivers, T. N. Ripsom and E. Waldeck, 35 Nassau street. The company is capitalized at \$50,000.

The Bethlehem Shipbuilding Corp., Sparrows Point, Md., contemplates the construction of an additional floating drydock, to be 400 feet long, 80 feet wide and 20 feet deep, to be operated with electric power.

David Cohen, Joseph Zeeman and John A. McManus all of New York, have been named as the incorporators of the C. C. Navigation Corp., which is capitalized at \$300,000.

With \$100,000 capital, the United States Mail Steamship Corp., 120 Broadway, New York, recently was incorporated by J. W. Henry, A. P. Hawkins and R. W. Craft.

Capitalized at \$240,000, the A-Z Navigation Corp., New York, recently was incorporated by David Cohen,

New Offices

William Bunting has opened an office in Jacksonville, Fla., for marine surveying and consulting engineering work. Mr. Bunting was chief engineer for the Clyde line for a period of 15 years. Recently he was an inspector for the division of operations, department of construction and repair, United States shipping board.

Walter Lambert, 700 Drummond building, Montreal, Que., recently resumed his business as naval architect, marine surveyor and vessel broker. During the war he was assistant director of shipbuilding to the imperial munitions board, Canada.

The National Transit Pump & Machine Co., Oil City, Pa., has opened an office in Cleveland at 408 Park building with C. A. Roberts in charge.

J. Murray Watts, naval architect and marine engineer, has opened an office at 136 South Fourth street, Philadelphia. Mr. Watts recently returned from France where he served as captain of Co. E, Fifty-seventh engineers.

The Kennedy Valve Mfg. Co., Elmira, N. Y., announces the opening of branch warehouses in Boston and in Chicago. The Boston warehouse is located at 47 India street and that in Chicago at 204-208 North Jefferson street.

The Camden Forge Co., Camden, N. Y., has established a New York district sales office at 2 Rector street, with Samuel W. Hill as manager.

L. Prior, president of the Merrill-Stevens Shipbuilding Corp., Jacksonville, Fla., and of the Louisiana Corp., Slidell, La., has opened an office at 280 Broadway, New York. O. H. Taylor is the representative in charge. The Jacksonville plant has facilities for constructing steel ships up to 10,000 tons while the Slidell yard confines itself to standard steel cargo ships of 3500 tons.

Harris, Magill & Co., Inc., steamship agent and ship broker, has opened a branch office in New Orleans under the management of J. S. Clark. The company also has offices in Philadelphia, Norfolk, Va., Savannah, Ga., and Galveston, Tex. The main office is in New York.

John A. McManus and Joseph S. Zeeman, to own and operate boats of all kinds.

The International Marine Construction Co., Newark, N. J., recently was incorporated with \$5,000,000 capital, by Robert Spiro, H. E. A. Rabbe and W. A. Bischoff.

Among the incorporations recently chartered in New York, is that of the Northern Steamship Co., which is capitalized at \$100,000. The incorporators are R. F. Clarke, H. D. Cogson and K. R. Higgins.

M. L. Harty, S. L. Mackey and M. C. Kelly of Wilmington, Del., recently chartered the Burrell Engineering & Equipment Co. The firm's capital was placed at \$500,000.

The Georges Creek Steamship Co., Union, N. J., recently was incorporated with \$600,000 capital, by F. S. McCauley, N. S. Schreeder and Ned Cadwallader, all of Weehawken, N. J.

Incorporated to build vessels by Frank I. Cowan, H. W. Baston and Clement F. Robinson, the East Coast Fisheries Products Co., Portland, Me., has been capitalized at \$50,000,000.

The New Baltimore Shipbuilding & Repair Corp., New Baltimore, N. Y., recently was incorporated with \$45,000 capital, by W. W. Stebbins, W. J. Wade and R. B. Drew, 597 Henry street, Brooklyn, N. Y.

Capitalized at \$30,000, the Monofor Shipbuilding Co., New York, recently was incorporated by L. F. Sniffin, J. L. Druck and F. Kweton, 49 Wall street, New York.

James Bailey, Richard A. Murphy and L. E. Murphy, recently were named as the incorporators of the Murphy Shipbuilding Co., Boston, which was chartered with \$80,000 capital.

The Ferguson Steel & Iron Corp., Buffalo, recently was incorporated to engage in boat building, by B. L. Worden, R. A. Kellogg and E. M. Knauth. The company is capitalized at \$963,500.

The Walden-Worcester, Inc., wrenches, etc., Worcester, Mass., recently awarded a contract for the erection of a plant, four stories, 60 x 333 feet, a hardening building, one story, 60 x 100 feet, a boiler house, 40 x 50 feet, and a garage, 40 x 60

feet. The W. F. Kearns Construction Co., Boston, was awarded the contract.

C. P. and B. Jensen, 220 Wakeman place, Brooklyn, N. Y., recently incorporated the Jensen Oil Engine & Machine Co., Brooklyn, N. Y. The company's capital was fixed at \$20,000.

Capitalized at \$1,000,000, the Empire Repair & Electric Welding Co., New York, recently was incorporated by R. C. Thackara, E. F. Luckenbach and C. Kuhne, 41 Whitehall street.

The Inland Marine Corp., Syracuse, N. Y., has been incorporated with \$100,000 capital, by D. E. Alvord, B. E. Shove and M. S. Melvin to manufacture marine equipment.

Four storage buildings, a pattern shop and several tank cars were damaged recently by a fire which broke out in the plant of the Pittsburgh Model Engine Co., Pittsburgh. The loss was estimated at \$200,000.

The Winnier-Erickson Engine Co., Boston, recently was incorporated with \$100,000 capital, by Albert J. Winnier, Natick, Mass.; Walter E. Erickson, Brookline, Mass., and Samuel W. Culver, Dorchester, Mass.

Capitalized at \$5000, the Federal Oil Tank & Pump Co., New York, recently was incorporated by B. Simon, M. Saller and D. Klein, 1432 University place, New York.

Incorporated by A. B. Lampke, S. D. Stein and H. V. Williams, 92 Broadway, New York, the capital of the Adelaide Navigating Co., New York, has been placed at \$100,000.

The Wyman Steamship Corp., New York, has been incorporated with \$50,000 capital, by V. B. Bendix, R. L. Lake and L. Akerstrom, 561 West 179th street, New York.

Plans are being prepared for the erection of an addition to the machine shop of the Tidewater Shipbuilders, Ltd., Three Rivers, Que., to be built at an estimated cost of \$50,000.

Capitalized at \$150,000, the Improved Propeller Corp., New York, has been incorporated by J. Kunse, S. Ratajczm and W. Kedzierski, 42 Broadway, New York.

The Highlands Navigation Corp., New York, recently was chartered by J. J. and D. F. McAllister and A. M. Clair, 103 Kent street, Brooklyn, N. Y. The company is capitalized at \$250,000.

The Brooklyn Ship Repair Corp., New York, recently was chartered with \$750,000 capital, by T. Barth, Charles Karlson and Robert E. Shortell, View Court, Brighton Heights, N. Y.

Among the recent incorporations is that of the Atlantic Adriatic Steamship Corp., New York. The company, which is capitalized at \$100,000, was incorporated by V. S. Bendix, R. L. Lake and L. Akerstrom, 561 West 179th street.

Incorporated to build and operate steamships, etc., the Alliance Steamship Co., Ltd., Montreal, Que., has been capitalized at \$1,000,000. The incorporators are Frederick H. Markey, Waldo W. Skinner and George G. Hyde.

The Sydney Foundry & Machine Co., Sydney, N. S., which conducts a repair business in marine lines, contemplates the erection of a plant addition, and at present is in search of a suitable site for a drydock.

Erection of a drydock, to be built at an estimated cost of \$5,000,000, will be started early in 1920 for the Lousburg Drydock & Shipbuilding Co., Lousburg, N. S. One of the company incorporators is J. W. Maddin.

A recent incorporation is that of the Diamond Steamship Co., 1476 Broadway, New York. The company, which is capitalized at \$1,000,000, was incorporated by William F. O'Keefe, J. H. Dowdell and George G. Steigler.

The Gulf Ship Co., formerly the Frenz shipyard, has established modern shipways on its site at Pascagoula, Miss. Two large freighters are now under construction at the plant. H. H. Coile is superintendent of the plant.

Property formerly occupied by the Quintard Iron Works, New York, has been acquired by the Todd Shipyards Corp., 15 Whitehall street, New York. The property is 206 x 270 feet, and will be used by the new owner for shipbuilding operations.

Plans are being prepared for erecting an addition to the plant of Charles Cory & Son, 290 Hudson

street, New York, manufacturer of ships, engine bells, electrically operated apparatus, etc. The building will be six stories, 140 x 175 feet, and of reinforced concrete construction. The total expenditure has been estimated at \$200,000. Russell G. Cory, 19 Cortlandt street, is chief engineer in charge.

Preparations are being made by the Southwestern Shipbuilding Co., San Pedro, Los Angeles, for the construction of 10 steel vessels at its plant for the United States shipping board, for which it has received contracts.

Capitalized at \$100,000, the Biggers Boat Propeller Co., Nashville, Tenn., recently was incorporated to manufacture propellers and other products. The incorporators are L. P. Biggers, J. M. Buckley and N. C. Kilgore.

The Cape Cod Shipbuilding Co., Wareham, Mass.,

has been incorporated under the laws of Massachusetts. The list of incorporators includes many men prominent in Boston marine circles and Charles Gurney has been named as president of the company. The firm's plans as yet have not been announced.

H. W. Hebb, who recently resigned as purchasing agent for the Merrill-Stevens Shipbuilding Corp., Jacksonville, Fla., will engage in the marine railroad and contractor's supply business under the name of H. W. Hebb Supply Co., Inc., Jacksonville, Fla.

The Cochran Mfg. & Forging Co., is the new name of the Cochran Pipe Wrench Mfg. Co., Chicago. The company manufactures wrenches, spring oilers, drop forgings and drop forge dies. The object of the change in name, made on Oct. 1, was more clearly to indicate the business in which the company is engaged.

New Trade Publications

ELECTRIC DRILL.—The Van Dorn Electric Tool Co., Cleveland, is issuing a circular which describes its combination electric tool. This device is designed for use in shipyards and aboard ship and can be adapted for drilling and grinding, either as a bench drilling stand or as a sensitive drill. The circular is illustrated and describes the device fully.

ORE UNLOADING EQUIPMENT.—The Wellman-Seaver-Morgan Co., Cleveland, recently issued an attractive bulletin describing its automatic ore unloaders. Many illustrations, taken under working conditions, are included together with a comprehensive technical description of the equipment. In a recent test, eight machines of the type described unloaded 70,000 tons of ore in 22 hours.

DRAFT GAGE.—A circular describing a draft gage recently was issued by the Precision Instrument Co., Detroit. This gage enables the fireman to detect the kind of fire he is running, whether heavy, thin or dirty, shows positive pressure in the combustion chamber and fire box and indicates draft in the uptake. The construction and operation of the device is fully described.

CONDENSER TUBES.—The Wheeler Condenser & Engineering Co., Carteret, N. J., recently issued a pamphlet devoted to its condenser tubes. The important part paid by condenser tubes in war as set forth by Admiral Jellicoe is given together with hints on condenser tube corrosion. Several tables are included which give details of seamless tubes, condenser tubes and weight per lineal foot of tubing.

OIL TANKS.—A circular describing tanks for holding lubricating oils recently was issued by S. F. Bowser & Co., Inc., Fort Wayne, Ind. It is pointed out that the tanks can be set in batteries provided with a barrel track, cradle and dash for filling them. The oil is withdrawn by means of a quickly operated pump which measures and draws a quart with one full stroke. For drawing off smaller amounts stops are provided which are readily set.

MARINE HARDWARE.—Sargent & Co., New Haven, Conn., recently issued a 72-page illustrated catalog devoted to their line of marine hardware. Nearly 300 separate articles are listed and described. Many of the units are made according to United States navy and Emergency Fleet corporation specifications. The articles described include locks of all kinds, night latches, key plates and escutcheons, nobis and handles, butts and hinges, ice box fasteners, meat hooks, door holders and hooks, push and kick plates, bolts and catches, window fittings, rail brackets, padlocks, etc. The list is complete and arranged for ready reference.

MARINE SUPPLIES.—C. C. Galbraith & Son, New York, have just issued a 180-page catalog of their steamship and shipyard supplies. The catalog is illustrated and contains comprehensive descriptions of all the articles listed. The company manufactures metallic lifeboats, working boats, power boats, life-

rafts, wooden lifeboats and motor yawls while among the shipyard supplies listed are trenails, wedges, plugs, oakum, caulking cotton, spikes, clinch rings, bolts, washers, cleats, chocks, bunker plates, towing bitts, turnbuckles, anchors, chain, port lights, pumps, steering heels, windlasses, capstans, manholes, ship castings, storage batteries, etc. Among the ship equipment is included compasses, binnacles, pelorus, sextants, ships' logs, fog horns, megaphones, flags, hawser reels, holisting outfits, etc.

LOCOMOTIVE CRANE.—The United States Crane Co., Chicago, in bulletin 190, recently published, describes and illustrates its line of locomotive cranes, for grab-bucket, hook-block or magnet service. Some of the specifications of these cranes are: Working weight, 159,000 pounds; shipping weight 120,000 pounds; ballast required 30,000 pounds; lower frame, 18-inch I beams with cast steel brackets for spur gear drive mechanism; rotation gear and roller path; rotation rollers; rotating frame; side housings; engines are of the vertical type, double, 10-inch cylinder diameter with 10-inch stroke; boilers of the vertical type, 54-inch diameter, 9½ feet high, 125 tubes, 2½ inches in diameter; steam pressure 125 pounds to the square inch; water tank capacity, 500 gallons and coal bunker capacity, 2000 pounds. The cranes have a drawbar pull of 9000 pounds maximum, a hoisting speed of 280 feet per minute and has lifting capacities, without track clamps or outriggers, 50 foot boom, of 20 tons at 15-foot radius, and four tons at 50-foot radius.

ENGINE ROOM EQUIPMENT.—Hills-McCanna Co., Chicago, has just issued a booklet describing force feed lubricators, high pressure gage cocks, low water alarms, boiler compound feeders and boiler test pumps. The company points out that its force feed lubricators are simple in design and construction and that they will operate for long periods with but little attention. The booklet contains several illustrations and the various articles are fully described.

PLATE PUNCHES.—A booklet describing punches for boiler and ship plates recently was issued by the Cleveland Punch & Shear Works Co., Cleveland. It explains a system developed by the company wherein one nut accommodates several punches, so that holes from ¼ to 1½ inches can be punched by a quick substitution of one punch for another. Several reproductions of line drawings are included which give the principal dimensions of the punches, sleeves and dies.

SQUARE HOLE BORER.—A device for machining square holes in metal is fully described in a pamphlet recently issued by the Deschanel Engineering Corp., New York. The device is made to fit either a horizontal milling machine or an upright drill and by means of leaders, incorporated in the head, the outline desired is generated without the use of extra leader plates. The device is said to be simple in construction and easy to operate.